

Final

Environmental Impact Statement for Proposed White Elk Military Operations Area



**United States Air Force
Air Combat Command**



April 2011

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**RECORD OF DECISION
FOR THE
WHITE ELK MILITARY OPERATIONS AREA
WHITE PINE AND ELKO COUNTIES, NEVADA**

This document records the United States Air Force (Air Force) decision with regard to establishing the White Elk Military Operations Area (MOA) in Nevada. This Record of Decision is based on the information, analysis, and public and agency comments presented in the Final Environmental Impact Statement (EIS), as well as other factors.

This Record of Decision has been drafted in accordance with the regulations implementing the National Environmental Policy Act (NEPA), specifically Title 40 Code of Federal Regulations (CFR), Section 1505.2, *Record of decision in cases requiring environmental impact statements* (40 CFR § 1505.2). Specifically, this ROD:

- States the Air Force's Decision (page 10);
- Identifies all alternatives considered by the Air Force in reaching the decision (pages 5-6) and specifies the preferred and environmentally preferred alternative (page 6);
- Identifies and discusses the environmental consequences of the proposed action (pages 6-8); and
- Summarizes mitigation measures and programs/processes in place to address issues and assist in reducing the potential environmental impacts associated with the White Elk MOA (pages 8-9).

BACKGROUND

The 388th Fighter Wing (388 FW) of Headquarters Air Combat Command is assigned to Hill Air Force Base (AFB), Utah. The base also supports the 419th Fighter Wing (419 FW), as part of Air Force Reserve Command, which is partnered with the 388 FW in a classic association. The mission of these wings is to develop and maintain F-16 fighter wings capable of day, night, and all-weather combat operations. The F-16 fighter wing forms an integral part of the United States Air Force's Aerospace Expeditionary Force, expected to deploy and fight around the world. To succeed, F-16 pilots must confront the world's most sophisticated enemy tactics and anti-aircraft systems. Pilots require consistent and reliable access to training airspace that provides a realistic combat environment in order to complete defined requirements and ensure combat readiness. The primary training airspace used by Hill AFB F-16 pilots is within the Utah Test and Training Range (UTTR) located approximately 50 miles west of Hill AFB. The UTTR airspace consists of 10 restricted airspace units, 8 Military Operating Areas (MOAs), and 2 Air Traffic Control Assigned Airspace (ATCAA) units linked together to form a cohesive complex with minimum and maximum altitudes ranging from the earth's surface to 58,000 feet above mean sea level. With these airspace units and underlying range assets, UTTR is a highly-valued national resource for testing and evaluation programs by the Air Force. Test and evaluation programs conducted at UTTR include the

F-22 Raptor, cruise missiles, and Joint Direct Attack Munitions; all demanding significant use of UTTR airspace and ground assets.

Because of these superlative assets, the Department of Defense identified UTTR as a Major Range and Test Facility Base. Under Department of Defense Directive 3200.11, testing and evaluation program activities receive priority scheduling over all other uses. F-16 training, while considered important, represents a secondary function at UTTR. Limits on the availability of UTTR airspace due to priority test and evaluation program activities reduces the total number of sorties flown by the 388 FW below the levels necessary to accomplish readiness qualification and achieve combat-ready status. To conduct their training, the F-16 pilots need airspace of sufficient horizontal and vertical size to permit air-to-ground maneuvering, air combat, and multi-ship operations. Moreover, the F-16 pilots need daily access to training airspace that fulfills these requirements.

An EIS was prepared to aid in determining whether or not to establish the White Elk MOA on the western edge of the existing UTTR over White Pine County and Elko County in Nevada. Establishment of the additional airspace linked to the existing UTTR would permit the 388 FW to schedule and use the airspace to conduct combat training when the existing UTTR airspace is unavailable due to testing and evaluation program activities. The proposal includes the following component actions:

- Establishing new training airspace, the White Elk MOA, extending from 14,000 feet to 18,000 feet above mean sea level (approximately 3,100 to 8,400 feet above ground level due to ground surface variations);
- Performing training operations in the White Elk MOA and existing, overlying Currie/Tippet ATCAA;
- Obtaining authorization for supersonic operations in the existing Currie/Tippet ATCAA above 18,000 feet mean sea level (approximately 7,100 to 12,000 feet above ground level due to ground surface variations); and
- Using training chaff and flare in the White Elk MOA and existing Currie/Tippet ATCAA airspace.

The EIS also evaluated the no-action alternative under which the White Elk MOA would not be established, supersonic activities in the Currie/Tippet ATCAA would not be authorized, and chaff and flare would not be employed in the airspace.

The Air Force identified a set of six criteria that an alternative airspace proposal must fulfill to support the training needs of the 388 FW: 1) utilize existing military airspace; 2) maximize training time/minimize transit time; 3) prioritize training time; 4) limit conflicts with civil aviation; 5) offer airspace of appropriate size and configuration; and 6) permit supersonic flight and deployment of chaff and flare. The Air Force considered four locations in proximity to Hill AFB for establishment of the new MOA

airspace but only one, the area over White Pine County and Elko County on the western edge of UTTR, met each of the six criteria necessary to fulfill the training requirements of the 388 FW.

PUBLIC INVOLVEMENT

The public involvement process and Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) and agency consultation accomplished by the Air Force are discussed in the Final EIS (Appendix A). The major elements of public involvement were:

- The public involvement process began with the publication of the Notice of Intent to prepare an EIS in the *Federal Register* on November 28, 2007. The Notice of Intent included dates and locations for scoping meetings. After public notification in newspapers and public service announcements on radio stations, three scoping meetings were held December 18 through December 20, 2007 at the following northern Nevada locations: Ely, Elko, and West Wendover, Nevada to actively solicit input from the public, local governments, federal and state agencies, American Indian tribes, and environmental groups. An additional meeting in West Wendover was held specifically for American Indian Tribal representatives. A total of 16 people attended the meetings; no written comments were provided. By the end of the scoping period, January 7, 2008, 14 comment letters were received; two were also received after the official scoping period was concluded and were considered as well. All relevant comments were considered in the development of the Draft EIS.
- The Notice of Availability of the Draft EIS was published in the *Federal Register* (Vol. 73, Number 159) [Notices] [Page 47949] on August 15, 2008, beginning the 45-day public review period. Public hearings were held September 2 through September 4, 2008, in these northern Nevada locations: Ely, Elko, and West Wendover. The closing of the comment period was extended from September 29, 2008 to November 13, 2008 at the request of Senator Harry Reid of Nevada. All relevant comments received during the public review and comment period were reviewed by the Air Force and considered in the preparation of the Final EIS.
- The Notice of Availability of the Final EIS was published in the *Federal Register* (Vol. 76, Number 98) [Notices] [Page 29241] on May 20, 2011, beginning the 30-day public review period. The review period closed on June 20, 2011. One letter was received on the FEIS and included recommendations to mitigate a remaining concern of general aviation pilots.

Few modifications were made to the EIS based upon the input received during the public review and comment period for the Draft EIS; these modifications were made to provide clarification of the proposed action and impact assessment. No modifications made to the FEIS in response to comments substantially changed the Proposed Action, and the conclusions relevant to environmental concerns remain consistent

with those presented in the Draft EIS. The Final EIS contains the public and agency comments and responses to comments received during the DEIS public review.

During the FEIS 30-day wait period an additional mitigation was requested to minimize impacts to air traffic utilizing Victor airway 269 (V269). As discussed in the FEIS, annual traffic counts on this route number approximately 365. Clover Control, an Air Force Air Traffic Control (ATC) facility providing ATC services in this area will assist general aviation traffic requiring altitudes above 13,000 feet MSL through this area thereby promoting flight safety over current levels. With this commitment, additional mitigation to avoid, minimize or mitigate this impact is unnecessary. Because the request did not contain significantly new circumstances or information relevant to environmental concerns and bearing upon the proposed action or its impacts, the AF determined it is not necessary to prepare a supplemental analysis.

AGENCY COORDINATION AND CONSULTATION

Federal Aviation Administration. The EIS was prepared in cooperation with the Federal Aviation Administration (FAA). In a letter dated September 28, 2007, the Department of the Air Force, Office of the Assistant Secretary, requested participation of the FAA as a cooperating agency for the White Elk MOA proposal in accordance with 40 CFR §1501.6, *Cooperating Agencies*. The FAA accepted the request to participate as a cooperating agency in a letter dated October 15, 2007. As a cooperating agency, the FAA participated in public involvement and preparation of the Draft EIS and Final EIS. The FAA will be responsible for evaluating, processing, and charting the MOA airspace.

Government-to-Government Consultation. The Air Force contacted 37 American Indian tribes, colonies, and other organizations regarding the Air Force proposal. Groups contacted included those who live in the vicinity of the airspace proposal and those who had potential ancestral ties to the area in the past. The list was compiled from the 19 tribes contacted by Hill AFB as part of their consultation process and additional tribes included in consultation with the Elko District and Ely District of the Bureau of Land Management (BLM). These groups were contacted through letters describing the proposed project and via telephone to confirm receipt of the letters and invitations to public meetings regarding the airspace proposal.

Only the Navajo Nation responded. The Navajo Nation concluded the proposed MOA would not impact any Navajo traditional cultural properties or historical properties. During a meeting to specifically discuss any American Indian concerns, three members of the Goshute Indian Reservation expressed concerns about aircraft crashes, noise, and overflight effects on the local economy. At a public meeting, a representative of the Te-Moak Tribe expressed concerns about sacred ancestral property under the proposed White Elk MOA, especially regarding interruption of religious ceremonies as a result of noise and visual intrusions from aircraft overflights. In October 2009, the Air Force attempted to contact the Chairperson of the Te-Moak Tribe of Western Shoshone Indians of Nevada requesting their assistance in

identifying any potential impact to areas of traditional importance to the tribe; no comments or responses were received. The Air Force successfully contacted the Te-Moak Tribe Chairman in April 2010 and on May 4, 2010 after investigating the representative's initial concern, the Chairperson stated there was no need to continue consultation with his office. In October 2010, the Nevada State Historic Preservation Office (SHPO) documented the Air Force had made a reasonable and good faith effort to identify historic properties that could be affected by this undertaking and issued concurrence with the Air Force's determination the proposed action would not pose an adverse effect to historic properties.

The *Bureau of Land Management* and the *United States Forest Service* manage much of the land below the proposed White Elk MOA. While not formally cooperating agencies, the Air Force consulted with these agencies to address their concerns. Other federal, state, and local agencies were notified of the proposal through the Interagency/Intergovernmental Coordination for Environmental Planning (IICEP) process.

The Nevada *State Historic Preservation Office* was notified early in the NEPA process via IICEP to allow sufficient time to evaluate potential environmental impacts of the proposed action on national listed or registered properties. Three National Register of Historic Places (National Register)-listed properties are located beneath the proposed airspace—Fort Schellbourne, the McGill Drug Store, and the American Legion Hall in McGill. Current conditions for all resources include overflights by military and civilian aircraft. Neither the noise nor the visual presence of these overflights has affected the National Register-eligibility status of the resources. Although the proposed undertaking would allow for supersonic flight, both the altitude of the aircraft and the limited number of sonic booms would ensure that there would be no adverse effects to cultural resources. Section 106 consultation was initiated March 2009 pursuant to the National Historic Preservation Act. As part of the Section 106 consultation, the Air Force prepared *NHPA Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada*. In response, the Ely District BLM requested the Air Force implement a five-year monitoring plan of historic structures within the Cherry Creek Mining District. The Air Force agreed to coordinate and finalize a monitoring plan with both the Ely District BLM and Nevada SHPO as part of the mitigations for the proposed action. Nevada SHPO concurrence, dated October 27, 2010, with the Air Force's determination the proposed action would not adversely affect historic properties, completed Section 106 consultation.

ALTERNATIVES ANALYZED IN THE EIS

The EIS analyzed two alternatives, the Proposed Action and No-Action. Several potential alternatives were considered but not carried forward for detailed analysis because they either did not meet the necessary criteria, or potential impacts to civil and commercial aviation could not be mitigated and continue to meet the identified criteria.

Proposed Action

Establishing the White Elk MOA (Proposed Action) would allow the 388 FW to schedule and use airspace consistently and reliably when the UTTR airspace is unavailable due to test and evaluation program activities. In this way, the 388 FW would have unencumbered access to airspace that, in combination with existing UTTR airspace and ground assets, would meet all requirements to train F-16 pilots in the 388 FW and 419 FW for combat to include adequately-sized airspace, ground-based threats and adversary aircraft, variety of targets for air-to-ground missions, supersonic flight, and use of chaff and flare.

No-Action Alternative

Under the no-action alternative, the Air Force would not establish the White Elk MOA, supersonic activities in the Currie/Tippet ATCAA would not be authorized, and chaff and flare would not be employed in the airspace.

Preferred and Environmentally Preferred Alternatives

The Air Force identified the proposed action as the preferred alternative. The preferred alternative would establish the White Elk MOA for training. It would also authorize supersonic flight in the overlying Currie/Tippet ATCAA above 18,000 feet MSL and would permit use of chaff and flare in the MOA and ATCAA airspace. The preferred alternative best meets the purpose and need in terms of supporting the full training requirements of F-16 pilots at Hill AFB.

CEQ regulations require the proponent to identify the preferred alternative. The Air Force has defined the Proposed Action as the preferred alternative. CEQ regulations also require an environmentally preferable alternative be identified. The no-action alternative would not substantially impact the environment in the short-term, and for NEPA purposes, it would be the environmentally preferable alternative in that it has the least potential for adverse environmental consequences.

ENVIRONMENTAL CONSEQUENCES

The findings in this EIS indicate the proposed White Elk MOA would result in either limited effects or would not change current environmental conditions in the area. Airspace and aircraft operations within the proposed White Elk MOA will have limited effects or no change to current conditions with respect to noise; safety; land use; recreation and visual resources; biological resources; cultural resources; socioeconomics; environmental justice and protection of children; and American Indian concerns. Each of the resources potentially affected by the proposal is presented below. Potential impacts to Air Quality,

Global Climate Change, Soils and Water, and Hazardous Materials and Waste were assessed and, in accordance with CEQ regulations, did not warrant further analysis in the EIS.

Airspace and Aircraft Operations: Total annual sorties conducted by the 388 FW F-16 aircraft would not increase under this proposal. Rather, combat training operations that cannot be conducted in the UTTR airspace due to priority scheduling of other missions would be conducted in the White Elk MOA and Currie/Tippet ATCAA airspace resulting in a redistribution of sortie-operations instead of increased sortie-operations. Aircraft operations in the proposed airspace would increase by 571 percent; in 2007, 548 sortie-operations were conducted in the Currie/Tippet ATCAA. Under the proposed action, a total of 9,590 sortie-operations would be conducted annually in the proposed White Elk MOA and Currie/Tippet ATCAA airspace; 460 of these would be nighttime (after 10:00 p.m.) sortie-operations. The Air Force proposes to dispense 40,700 bundles of chaff annually in the White Elk MOA and Currie/Tippet ATCAA airspace; an estimated 31,630 flares would be deployed per year. All flare use will adhere to minimum release altitude restrictions (per AFI 11-214, 2005) of 2,000 feet AGL over the lands under the MOA. Actual flare release would be higher (3,000 to 12,000 feet AGL) given the altitude of the floor of the MOA and the profile flown by the F-16s.

Noise: In terms of noise, no perceptible increase to the subsonic noise levels to areas under or near the proposed White Elk MOA and overlying Currie/Tippet ATCAA would result from the proposed action. Although slight changes in noise levels under the airspace would occur, these would continue to remain below DNL 45 dB. Noise levels of DNL 45 dB or less are considered very low, well below any standards defined by the U.S. Environmental Protection Agency (USEPA) as protective of public health. Supersonic training would create approximately 296 sonic booms per month in the Currie/Tippet ATCAA. Sonic booms, which do not currently occur in the area, would occur at an average of 10 per flying day somewhere within the whole area. Not all booms will reach the ground and about 1 boom every two flying days could be heard in the center of the lands under the airspace. Because of the nature of training operations, the number of sonic booms heard will diminish with distance from the center of the airspace.

Safety: The White Elk MOA would be under Clover Control radar coverage; Clover Control would assist general aviation traffic through this area. Although allowed to fly through the active MOA under visual flight rules, gliders operating in the Great Basin may choose to avoid the White Elk MOA. Gliders tend to operate at altitudes at the lower end of the spectrum of the proposed White Elk MOA and Currie/Tippet ATCAA, a few thousand feet of overlap between glider and military operations could occur if soaring conditions were to permit flight above 14,000 feet MSL. No significant impacts to glider operations are expected since glider activity is limited in duration and frequency and Hill AFB will implement a Glider Interaction Program.

Land Use, Recreation, and Visual Resources: Portions of a wilderness study area and three wilderness areas underlie the proposed airspace. These areas currently experience overflights and noise levels of DNL 45 dB or less. Under the proposed action, noise levels from aircraft overflights will remain less than DNL 45 dB. Noise from sonic booms could be experienced but would be infrequent and short in duration. Overall, the proposed action would not reduce the quality, characteristics, or values associated with this resource area.

Biological Resources: For biological resources, no anticipated impacts to plant or animal species or water resources from noise generated by sonic booms or from chaff and flare usage. No state or federally listed plant or animal species exist under the proposed airspace.

Cultural Resources: Cultural resources would not be adversely impacted; three National Register-listed properties are located beneath the proposed airspace. However, no impacts to these properties from sonic boom vibrations or chaff and flare usage are anticipated. Resources of concern to American Indians would not be impacted by this proposal.

Socioeconomics: Socioeconomics and development in Elko and White Pine Counties would not be adversely affected. No public airports or airfields underlie the proposed White Elk MOA airspace. One small civil airport, Ely, lies approximately 15 miles south of the proposed White Elk MOA. Training operations would occur at or above 14,000 feet mean sea level resulting in no impact to Ely airport operations. No adverse impacts to future commercial and general aviation growth in Nevada or Utah would be anticipated. Revenues from Ely airport activities and organized glider events should remain unchanged.

Environmental Justice and Protection of Children: No disproportionate impacts to minority or low-income populations from sonic booms due to the rarity of events at any single location. One elementary school is located within the southernmost tip of the MOA/ATCAA airspace. Increased noise levels would be nearly imperceptible at this location and the probability of an F-16 mishap remains very low; therefore, there would be no adverse impacts to the health and safety of children.

MITIGATION MEASURES AND MANAGEMENT ACTIONS

Reduction of the potential for environmental impacts represents an important part of NEPA.

CEQ regulations (at 40 CFR §1508.20) define mitigation as follows:

1. **Avoiding** the impact altogether by not taking a certain action or parts of an action.
2. **Minimizing** impacts by limiting the degree or magnitude of the action, and its implementation.
3. **Rectifying** the impact by repairing, rehabilitating, or restoring the affected environment.

4. **Reducing or eliminating** the impact over time by preservation and maintenance operations during the life of the action.
5. **Compensating** for the impact by replacing or providing substitute resources or environments.

Hill AFB conducts ongoing efforts designed to achieve reductions in the affect the base has on the community and to work with groups or members of the community to address issues. All of these efforts, including those highlighted below and other operational mitigations which are part of the EIS, would continue to apply following establishment of the White Elk MOA. By continuing these efforts, Hill AFB will reduce the potential impacts associated with establishing the White Elk MOA.

Safety: To reduce the risk of fire, F-16 pilots from Hill AFB will not deploy flares under high fire conditions as defined by the National Weather Service using the National Fire Danger Rating System. In addition, the Air Force will initiate a public information campaign to inform the public about the hazards of dud flare discovery and the procedures for reporting such findings. The 75 ABW maintains a Wildland Fire Management Plan and the land area under the proposed White Elk MOA will be covered under the existing fire management mutual aid agreements with local agencies, as well as, the Bureau of Land Management's Resource Management and Fire Management Plans.

Noise and Overflight Issues Program: Hill AFB operates a toll-free number (877-885-9595) which the public can call regarding noise or overflight issues in the UTTR airspace. This program will include the White Elk MOA. All calls are logged and reviewed. If a violation of procedures or directive is identified, the Air Force will take measures to prevent its reoccurrence.

Glider Interaction Program: There is no restriction against gliders operating under visual flight rules in the White Elk MOA; however, aerobatic and abrupt maneuvers may be employed by military pilots. Therefore, military pilots will be briefed glider activity may occur in the area. Furthermore, Hill AFB airspace managers will mitigate potential conflicts as follows:

- Establish a Notice to Airmen warning of glider activity at appropriate times of the year;
- Schedule use of the White Elk MOA to avoid conflicts with "Glider Week;"
- Implement a program to help avoid potential conflicts and educate the glider community on hazards within the White Elk MOA; and
- Provide the Hill AFB Range Scheduling Office phone number to the public so that information regarding Air Force training activities can be easily obtained.

The Air Force will also continue to evaluate the concerns with glider activity associated with establishing the White Elk MOA. Should further feasible deconfliction procedures be identified, the Air Force will assess and potentially implement them based on training needs and national mission directives.

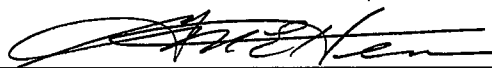
Historic Structures Monitoring Program: Modeling indicated noise levels and sonic booms would be greatest in the Cherry Creek area of Elko County. The Cherry Creek area is a historic mining settlement that dates back to the early 1870s. While the increase in noise would be negligible and the sonic booms would produce minimal vibrations from overpressure, the Air Force agreed with the Nevada SHPO and Ely District BLM to develop and implement a 5-year monitoring program of the historic structures in the Cherry Creek Mining District.

Native American Program: Hill AFB has a comprehensive American Indian Program and conducts government-to-government relations with American Indians affected by activities at the base and in the UTTR. Hill AFB's American Indian Program and associated government-to-government relations will continue and any future concerns from the American Indians regarding operations in the White Elk MOA will be addressed through this program.

The EIS used public involvement to identify impacts and assess the environmental consequences associated with establishing the White Elk MOA. The Air Force is taking all practicable means to avoid or minimize harm from the Proposed Action. Should additional prudent measures become available, the Air Force will implement them to the maximum extent possible, commensurate with cost, mission capability, and flight safety. The mitigation measures and management actions described above will be implemented and monitored to evaluate their effectiveness.

DECISION

After considering the potential environmental consequences of the Proposed Action and no-action alternative, as well as, other factors relative to national defense, including current military operational needs, the Air Force has decided to select the Proposed Action to establish the White Elk MOA airspace adjacent to the UTTR over White Pine County and Elko County in eastern Nevada along with the authorization of supersonic operations in the overlying Currie/Tippet ATCAA and use of training chaff and flare in the White Elk MOA and Currie/Tippet ATCAA airspace. The Proposed Action includes all practicable means to avoid, minimize, or mitigate environmental harm.



GORDON M. ETTENSON, SES, DAF
Deputy Director of Operations

4 Nov 11

Date

ACRONYMS AND ABBREVIATIONS

ACC	Air Combat Command	MOA	Military Operations Area
AEF	Aerospace Expeditionary Force	MRTFB	Major Range and Test Facility Base
AFB	Air Force Base	MSL	mean sea level
AFRC	Air Force Reserve Command	NAAQS	National Ambient Air Quality Standards
AFI	Air Force Instruction	NRHP	National Register of Historic Places
AFOSH	Air Force Occupational Safety and Health	NDOT	Nevada Department of Transportation
AGL	Above Ground Level	NDEP	Nevada Division of Environmental Protection
AIRFA	American Indian Religious Freedom Act	NEPA	National Environmental Policy Act
ATC	Air Traffic Control	NHPA	National Historic Preservation Act
ATCAA	Air Traffic Control Assigned Airspace	nm	Nautical Mile
BAQ	Bureau of Air Quality	NOI	Notice of Intent
BASH	Bird/Wildlife-Aircraft Strike Hazard	NOTAM	Notice to Airmen
BLM	Bureau of Land Management	NTTR	Nevada Test and Training Range
BRAC	Base Realignment and Closure	OSS	Operational Support Squadron
CAA	Clean Air Act	psf	Pounds Per Square Foot
CAAA	Clean Air Act Amendments	RAP	Ready Aircrew Program
CAS	Close Air Support	ROD	Record of Decision
DCA/OCA	Defensive Counter Air/Offensive Counter Air Attack	SAT	Surface Attack Tactic
CDNL	C-Weighted Day-Night Average Sound Level	SEL	Sound Exposure Level
CEQ	Council on Environmental Quality	SHPO	State Historic Preservation Office
CFR	Code of Federal Regulations	SIP	State Implementation Plan
dB	Decibel	SLC ARTCC	Salt Lake Center Air Route Traffic Control Center
DBCRC	Defense Base Closure and Realignment Commission	SOA	Supersonic Operating Area
DNL	Day-Night Average Sound Level	TES	Test and Evaluation Squadron
DoD	Department of Defense	TI	Tactical Intercept
EIAP	Environmental Impact Analysis Process	USACE	United States Army Corps of Engineers
EIS	Environmental Impact Statement	USCB	United States Census Bureau
EO	Executive Order	USFS	United States Forest Service
ESA	Endangered Species Act	USFWS	United States Fish and Wildlife Service
FAA	Federal Aviation Administration	USEPA	United States Environmental Protection Agency
FBO	Fixed-Base Operator	UTTR	Utah Test and Training Range
FLPMA	Federal Land Policy and Management Act	VFR	Visual Flight Rules
FMC	Fire Management Categories	VRM	Visual Resources Management
FW	Fighter Wing	WSA	Wilderness Study Area
HAP	High Accident Potential		
IFR	Instrument Flight Rules		
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning		
JDAM	Joint Direct Attack Munitions		
JTAC	Joint Terminal Attack Controllers		
L	Sound Level		
L _{dnmr}	Onset Rate-Adjusted Monthly Day-Night Average Sound Level		
LOA	Letter of Agreement		

Final

Environmental Impact Statement for
Proposed White Elk
Military Operations Area

**United States Air Force
Air Combat Command**

April 2011

COVER SHEET
WHITE ELK MILITARY OPERATIONS AREA
FINAL ENVIRONMENTAL IMPACT STATEMENT

Responsible Agency: U.S. Air Force

Cooperating Agency: Federal Aviation Administration

Proposed Action: The U.S. Air Force (Air Force), in cooperation with the Federal Aviation Administration (FAA), proposes to establish a new military operations area (MOA) linked to the Utah Test and Training Range (UTTR) airspace, identified as the White Elk MOA. The White Elk MOA would extend from 14,000 feet mean sea level (MSL) to 18,000 feet MSL and would directly underlie all but the southwest corner of the existing Currie/Tippet Air Traffic Control Assigned Airspace (ATCAA) from 18,000 to 58,000 feet MSL. The Air Force proposal would include training flights in the White Elk MOA, increased operations in the existing ATCAA airspace, use of chaff and flares in the MOA and ATCAA, and authorization of supersonic flight in the overlying ATCAA. Hill AFB would continue to coordinate with the FAA regarding use of the ATCAA.

Written comments and inquiries regarding this document should be directed to:

HQ ACC/A7PS
129 Andrews St., Ste 122
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In addition, the document can be viewed on and downloaded from the World Wide Web at www.acplanning.org

Designation: Final Environmental Impact Statement

Abstract: Due to scheduling priorities and testing demands, existing UTTR airspace cannot support the full training requirements of the F-16 aircraft associated with the 388th and 419th Fighter Wings at Hill Air Force Base (AFB). The F-16 pilots at Hill AFB form an integral part of the United States Air Force's Aerospace Expeditionary Force, expected to deploy to and fight around the world. To succeed, F-16 pilots must confront the world's most sophisticated enemy tactics and anti-aircraft systems. Pilots require consistent and reliable access to training airspace that provides a realistic combat environment in order to complete defined requirements and ensure combat readiness. State-of-the-art aerial combat, close air support, and surface attack missions of the F-16 require highly tuned offensive and defensive pilot skills best practiced at operationally realistic speeds and altitude regimes to conduct all defined training events. Combat readiness requires training airspace configured and sized to allow pilots to practice current tactics at supersonic speeds and make full use of the F-16's capabilities. However, scheduling priorities and access limitations for UTTR prevent the 388th and 419th FWs from accomplishing all required training. About 10 to 15 percent of the requirements go unmet. Pilots cannot achieve combat-ready status. For these reasons, the Air Force defined a requirement to establish and configure airspace to permit full training with the current capabilities of the F-16 aircraft and its systems. To meet these requirements, the Air Force proposes to establish a new military operations area underlying existing training airspace at the western edge of the UTTR to support the 388 FW/419 FW F-16 training activities.

This Environmental Impact Statement analyzes the potential environmental consequences of establishing the proposed White Elk MOA, supersonic flight in the Currie/Tippet ATCAA, and use of chaff and flares in the MOA/ATCAA; and the no-action alternative in which the Air Force would implement none of these actions. The analysis indicates that no component of the proposed action would significantly impact airspace and aircraft operations; noise; safety; land use, recreation, and visual; biological resources; cultural resources; socioeconomics; environmental justice and protection of children. American Indians may perceive the noise and overflights as an issue over traditional lands. Authorized supersonic activity in the ATCAA would increase noise on lands below the airspace by 10 dB; noise at the center of the ATCAA airspace would be approximately 49 CDNL resulting in 10 sonic booms per day within the entire airspace; one sonic boom could be heard about once every two flying days at any given location under the airspace. Subsonic noise levels would remain low and would not measurably increase annoyance to people. There are no significant cumulative impacts from this airspace proposal with other reasonably foreseeable actions either by the Department of Defense or Elko or White Pine County business practices or development.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) analyzes the potential environmental consequences resulting from the United States Air Force (Air Force) proposal to establish a new military operations area (MOA) underlying existing training airspace at the western edge of the Utah Test and Training Range (UTTR) in Nevada. The MOA, identified as the White Elk MOA, would create additional special use airspace in northeastern Nevada in order to provide training opportunities for F-16 pilots not consistently available in the existing UTTR airspace. Extending from 14,000 feet to 18,000 feet above mean sea level (MSL), the MOA would directly underlie the existing Currie and Tippet (Currie/Tippet) Air Traffic Control Assigned Airspace (ATCAA) with the exception of its southwest corner. The Currie/Tippet ATCAA extends from 18,000 to 58,000 feet MSL, when activated. The Air Force proposal would include conducting training flights in the White Elk MOA, increased operations in the existing ATCAA airspace, use of chaff and flares in the MOA and ATCAA, and authorization of supersonic flight in the overlying ATCAA.

This Final EIS was prepared by the Air Force, Headquarters Air Combat Command (HQ ACC) in cooperation with the Federal Aviation Administration (FAA). The document has been prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA, and Air Force Instruction (AFI) 32-7061 – the Environmental Impact Analysis Process, as promulgated in Title 32 of the Code of Federal Regulations (CFR) Part 989.

The proposed action is the Air Force's preferred alternative because it supports the full training requirements of the F-16 aircraft associated with the 388th and 419th Fighter Wings (FW) at Hill Air Force Base (AFB). The no-action alternative is the environmentally preferred alternative as it would result in no changes to the existing environment.

PURPOSE AND NEED FOR THE ACTION

Due to Air Force mandated scheduling priorities and testing demands, existing UTTR airspace cannot support the full training requirements of the F-16 aircraft associated with the 388th and 419th Fighter FW at Hill AFB.¹ The F-16 pilots must forego 10 to 15 percent of required training activities (Air Force 2006a) due to these factors thereby affecting their combat-ready status. Some pilots cannot achieve combat-ready status. Cruise missile testing and other priority activities limit the availability of UTTR, effectively precluding the 388 FW's consistent and reliable use of UTTR for up to 33 weeks of the year. Given these factors, the Air Force needs to establish the White Elk MOA airspace to support the 388 FW's compliance with AFI 11-2F-16, Volume 1, *F-16 Aircrew Training* to maintain combat readiness.

¹ The 419 FW is subsumed under the 388 FW. For this EIS, only the 388 FW will be referenced further.

To conduct these necessary training missions, the F-16 requires blocks of airspace sufficiently large to match the operational characteristics and requirements of the aircraft. In addition, the F-16 pilots would need to train using the full range of capabilities of the aircraft, including supersonic flight and chaff and flare employment. The White Elk MOA, as proposed, would fulfill these needs.

Therefore, the purpose of this Air Force proposal is to provide airspace in which the F-16s of the 388 FW can conduct combat training operations in order to fulfill Ready Aircrew Program (RAP) training requirements currently not being met through use of the existing UTTR airspace. Establishment of the White Elk MOA below the Currie/Tippet ATCAA linked to the existing UTTR would permit the 388 FW to schedule and use airspace consistently and reliably without limitations imposed by test and evaluation priorities. In this way, the 388 FW would have unencumbered access to the new airspace that, in combination with existing UTTR airspace and ground assets, would ensure that the 388 FW could meet all of the F-16 training requirements.

To provide the 388 FW with adequate training airspace, the Air Force proposes to create additional special use airspace in northeastern Nevada. Extending from 14,000 feet to 18,000 feet MSL, the White Elk MOA would underlie the existing Currie/Tippet ATCAA that extends from 18,000 to 58,000 feet MSL when activated. By linking the proposed MOA to an existing, overlying ATCAA, the proposed action would offer sufficient airspace to conduct air-to-air training with multiple adversary and friendly aircraft. Although no ordnance would be released within the proposed airspace or associated ATCAA, pilots could employ all other elements of air-to-ground missions. Natural features of the built environment would offer an abundance of simulated targets in order to ensure fulfillment of those training requirements.

Because the purpose of the proposed action includes supporting all of the F-16 training requirements, it includes authorizing supersonic flight in the overlying ATCAA (above 18,000 feet MSL). Supersonic flight allows the pilots to engage and disengage at a rapid rate simulating conditions of real-world conflict. In addition, use of chaff and flares as defensive countermeasures in the MOA/ATCAA airspace would fulfill another training requirement.

PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Proposed Action

The White Elk MOA proposed action would establish additional airspace linked to existing UTTR airspace to provide the 388 FW with reliable and consistent training opportunities and the capacity to achieve combat-ready status for all F-16 pilots. This proposal would increase the opportunity for daily, consistent training by these pilots, avoiding the scheduling limitations of the rest of UTTR. Establishment of the White Elk MOA would permit the 388 FW to train using the full capabilities of

tactics and maneuvers needed to survive and succeed in combat. The proposed action consists of four basic components:

- Establishment of new airspace, the White Elk MOA;
- Performing training operations in the new White Elk MOA and increasing flight activity in the existing, overlying Currie/Tippet ATCAA;
- Authorization for supersonic operations in the Currie/Tippet ATCAA above 18,000 feet MSL; and
- Use of chaff and flares in the new MOA and existing ATCAA airspace.

Airspace Expansion. The proposed White Elk MOA would extend from 14,000 feet MSL to 18,000 feet MSL and directly underlie the Currie/Tippet ATCAA, with the exception of the ATCAA's southwest corner. With a ceiling of 58,000 feet MSL, the ATCAA, when combined with the new MOA, would provide extensive maneuvering room capable of supporting the combat tactics of the F-16s and other aircraft. Since the underlying terrain varies from flat basins to mountain peaks, the altitude of the floor of the proposed White Elk MOA above the ground varies commensurately from approximately 3,100 to 8,500 feet AGL. Adding the White Elk MOA would increase the total volume of UTTR airspace by roughly 1.4 percent. To permit expanded use of the existing Currie/Tippet ATCAA, the Air Force would request that the FAA modify the LOA to permit year-round use.

Sortie-Operations. Under the proposed action, the primary users of the White Elk MOA and Currie/Tippet ATCAA would be the F-16s from the 388 FW. In total, the 388 FW would conduct 9,200 sortie-operations annually in the combined MOA/ATCAA airspace; transient (not based at Hill AFB) aircraft would use the combined airspace, including F-15s, F-22s, A-10s, and KC-135s and conduct 390 annual sortie-operations. Annual sortie-operations in the MOA/ATCAA would total 9,590. The Air Force anticipates that the 388 FW would schedule the MOA and ATCAA together so each sortie-operation would use both airspace units. With the additional airspace, the F-16s would add Close Air Support, Defensive/Offensive Counter Air Attack, and Surface Attack Tactics to their missions. Sortie-operations in the remainder of UTTR and sorties out of Hill AFB would remain unchanged.

Authorization of Supersonic Flight. To train with the full capabilities of the aircraft, the F-16s would employ supersonic flight. Under the proposed action, supersonic operations would be authorized for all capable aircraft in the Currie/Tippet ATCAA above 18,000 feet MSL. The F-16s would conduct a maximum of 2,944 supersonic events in the ATCAA each year. Supersonic events would last about 1 to 2 minutes and 75 percent would occur above 30,000 feet MSL. Only 20 percent of F-16 missions would involve supersonic flight. Similarly, not all transient aircraft would employ supersonic flight; a total of 83 annual supersonic events are proposed for the transient aircraft.

Use of Chaff and Flares. Pilots use chaff and flares as self-protection measures against radar-directed anti-aircraft artillery and radar-guided and heat-seeking missiles. When pilots detect threats from these

systems, they must respond instantly and instinctively using appropriate countermeasures. The inability of pilots to actually use these countermeasures in training results in the loss of critical response patterns. The instinctive nature of these patterns often determines a pilot's survivability in a hostile environment. Military aircraft can currently use chaff and defensive flares within most of the existing UTTR. No such authorization applies to the existing Currie/Tippet ATCAA. Under the proposed action, the F-16s would annually use 40,700 bundles of RR-188 chaff and 31,630 M-206 defensive flares within the White Elk MOA and the overlying Currie/Tippet ATCAA. In addition, the transients using the airspace may use approved chaff and flares in low amounts and under approved conditions.

No-Action Alternative

Under the no-action alternative, the White Elk MOA would not be established, supersonic activities in the Currie/Tippet ATCAA would not occur, and chaff and flares would not be used. The capabilities of the pilots to perform effectively in real-world conflicts could be reduced without the additional airspace for the 388 FW to conduct RAP training when UTTR is unavailable.

PUBLIC INVOLVEMENT PROCESS

AFI 32-7061 and CEQ regulations require an early and open process for identifying significant issues related to a proposed action and obtaining input from the public prior to making a decision that could potentially affect the environment. These regulations specify public involvement at specific junctures in the development of an EIS, including public scoping prior to the preparation of a Draft EIS, and public review of the Draft EIS prior to finalizing the document and making a decision. Appendix B of the EIS includes a summary of public participation and the materials disseminated during this process.

Prior to the publication of the Draft EIS, the Air Force mailed Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) letters to federal agencies, Congress, and American Indians and issued a Notice of Intent (NOI). The NOI was published in the *Federal Register* on November 28, 2007.

Public Scoping

After public notification in newspapers and radio stations, three scoping meetings averaging 2 hours in duration, were held December 18 through December 20, 2007 at the following Nevada locations: Ely, Elko, and West Wendover. A meeting was also held with consulting American Indian tribal representatives in West Wendover to discuss the proposal and consult with them regarding any concerns. A total of 16 people attended the meetings and provided comments. By the end of the scoping period, January 7, 2008, 12 comment letters were received. Two additional comment letters were received after the official scoping period.

The major issues that emanated from the scoping process were the potential economic impacts to the region's energy projects, conflicts with civil/commercial aircraft flights and access to local airports, and effects to recreational activities (such as gliding and visitor's solitude). Letters were received from the Board of Commissioners of Elko County and White Pine County each concerned that the airspace proposal could impact their respective tourism industry. The Elko County Board of Commissioners expressed concern that the proposal would impact the local economy through land restrictions for development (namely wind energy projects and power plants), building height restrictions, commercial/civil flight restrictions, and loss of revenue at Wendover and Ely airports. The Commissioner's office expressed concern about the amount of existing restricted airspace and potential impacts to wilderness study areas under the proposed airspace. Letters were received from the Nevada State Historic Preservation Office (SHPO) and Nevada Fish and Wildlife Office. The SHPO requested that the Air Force contact members of the public with interest in historic properties as well as affected Native American Tribes that might be concerned about the effect on properties of religious and cultural significance. The Nevada Fish and Wildlife Office letter included a list of federally listed species that may occur or are potentially affected by the proposed action. No comments were received from the Bureau of Land Management (BLM) or Forest Service during the scoping period.

There were several comments from the general public regarding risks to recreational glider planes in areas including the American Great Basin, safety issues from chaff and flares, limiting flights so as not to conflict with search and rescue landings, and preserving the serenity of the remote areas. Two comment letters included support for the Air Force to control this airspace. The Aircraft Owners and Pilots Association (AOPA) requested that impacts on civil and commercial aviation be addressed in the EIS. LS Power Development requested the Air Force consider the potential impacts to several energy development projects underway in the vicinity of the proposed White Elk MOA.

Public Comment Period

Following the scoping period, the Air Force prepared a Draft EIS and made it available to the public and agencies for review and comment on August 15, 2008. The document was sent to those in the public who requested a copy and was made available at selected public facilities such as libraries and local government agencies within Nevada. The public review and comment period for the Draft EIS began with the notice of availability published in the *Federal Register* on August 15, 2008. During this period, the Air Force held formal hearings in the same three communities where scoping meetings occurred to provide an opportunity for the public to evaluate the proposal and the analysis contained within the Draft EIS. By request of Senator Harry Reid from Nevada, the public review period was extended to November 13, 2008. A total of six individuals commented at these meetings.

The 90-day public comment period yielded 22 comment letters from members of the communities, elected officials, agencies, and non-governmental organizations. The Air Force reviewed and analyzed 22

written comment letters and 6 verbal comments that included more than 200 individual issues, concerns, or questions.

Based on the oral comments at the public hearings and written received comments during the public comment period for the White Elk MOA Draft EIS, the primary issues surround potential glider and other general aviation conflicts at Yelland Field in Ely, Nevada. Ely is a destination spot for professional glider pilots from around the world. Approximately 40 glider pilots stay in Ely for four (4) to six (6) weeks in the summer to wait for good wind conditions for soaring. Once airborne, gliders may stay in the air for up to twelve (12) hours at a time. The proposed White Elk MOA would occupy a portion of airspace used by glider pilots during their flight season. While the White Elk MOA would not restrict air space use, White Pine County representatives and others associated with Yelland Field operations anticipate reduced numbers of glider flights due to perceived conflicts with sorties in the MOA. Individuals expressed concerns about indirect socioeconomic impacts due to potential reduction in glider pilot visits to Ely. General aviation issues included the potential for longer flight times for medical evacuation flights while the MOA was activated, and potential airspace conflicts with new commercial air services. The Ely Airport Advisory Board expects the proposed action to conflict with its development planning activities, including an FAA Airport Improvement grant to expand the runway length to 9,000 feet and improve precision approach capabilities. The Board anticipates new economic initiatives to be tied to granting activities and is concerned the proposed action will impede or preclude its planned growth. Additional issues brought forth during the public hearings were air quality impacts from aircraft and from chaff and flare disintegration; and the possible presence of bat migration corridors in the proposed MOA.

Comments received during the public review and comment period are addressed in this Final EIS and provided to the decision maker for consideration. These comments and responses are provided in Appendix A.

Copies of the Final EIS have been made available to the public. This EIS includes responses to comments and questions received during the public comment period. After a minimum of 30 days of review, the Air Force may publish a Record of Decision. The Record of Decision will specify the selected alternative, how it will be implemented, and mitigation measures, if any, that would be employed to reduce environmental impacts.

CONSULTATION

As required by law and regulation, the Air Force consulted with the Nevada SHPO regarding impacts to cultural resources eligible to the National Register of Historic Places. Section 106 consultation was initiated March 2009 pursuant to the National Historic Preservation Act (NHPA). As part of this consultation with the Nevada SHPO, the Air Force prepared *NHPA Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada*. In response, the

Ely District BLM requested that the Air Force implement a five-year monitoring plan of historic structures within the Cherry Creek Mining District. The Air Force agreed to coordinate and finalize a monitoring plan with both the Ely District BLM and Nevada SHPO as part of the mitigations for the proposed action. Nevada SHPO concurrence with the Air Force's determination that the proposed action would not adversely affect historic properties completed Section 106 consultation.

The Air Force also conducted government-to-government consultation with American Indian tribes with potential interests in the affected area. The Air Force contacted 37 American Indian tribes, colonies, and other organizations through IICEP letters describing the proposed project and via telephone to confirm receipt of the IICEP letters and invitations to public meetings regarding the White Elk proposal. Only the Navajo Nation responded to the IICEP letters, concluding the proposed MOA would not impact any Navajo traditional cultural properties or historical properties. During a meeting to specifically discuss any American Indian concerns, three members of the Goshute Indian Reservation expressed concerns about aircraft crashes, noise, and overflight effects on the local economy. At a public meeting, a representative of the Te-Moak Tribe expressed concerns about sacred ancestral property under the proposed White Elk MOA, especially regarding interruption of religious ceremonies as a result of noise and visual intrusions from aircraft overflights. In October 2009, the Air Force attempted to contact the chairperson of the Te-Moak Tribe of Western Shoshone Indians of Nevada requesting their assistance in identifying any potential impact to areas of traditional importance to the tribe; no comments or responses were received. On October 27, 2010, the Nevada SHPO documented that the Air Force had made a reasonable and good faith effort to identify historic properties that could be affected by this undertaking and issued concurrence with the Air Force's determination that the proposed action would not pose an adverse effect to historic properties.

SUMMARY OF IMPACTS

Analysis in the EIS established that the proposed White Elk MOA, authorized supersonic flight in the Currie/Tippet ATCAA, and use of chaff and flares in the MOA/ATCAA airspace would result in no adverse effects on any of the resources evaluated. Table ES-1 summarizes the consequences to the resources evaluated for both the proposed action and the no-action alternative.

Table ES-1 Comparison of Alternatives by Resource and Potential Impact

<i>Proposed Action</i>	<i>No-Action Alternative</i>
AIRSPACE AND AIRCRAFT OPERATIONS	
<ul style="list-style-type: none"> • UTTR airspace volume would increase by 1.4 percent • Annual sortie-operations in the MOA/ATCAA would total 9,590 • Vertical and horizontal structure of MOA designed to avoid impacts to airports and minimize effects to commercial air traffic routes and civil air traffic • Interactions with gliders may occur; 388 FW would schedule to avoid significant conflicts 	<ul style="list-style-type: none"> • UTTR airspace would not expand • Limited use of ATCAA would maintain sortie-operations at low levels (less than 400 annually) • Potential effects with airports, commercial and civil air traffic, and gliders would continue to be minimal • No change
NOISE	
<ul style="list-style-type: none"> • Subsonic noise would not exceed DNL 45 dB • One sonic boom could be heard about once every two flying days at the center of the airspace with up to 10 occurring each flying day throughout the entire airspace • CDNL values of up to 49 dB at the center of the ATCAA airspace; this does not exceed the level identified by USEPA as protective of public health • Average peak overpressure would be under 1psf with a small probability of booms exceeding 6 or 7 psf; sonic booms are not expected to damage most structures although damage to deteriorated structures could occur 	<ul style="list-style-type: none"> • Baseline noise would remain below DNL 45 dB • No sonic booms or supersonic noise in the existing Currie/Tippet ATCAA
SAFETY	
<ul style="list-style-type: none"> • Training operations would continue to be performed in accordance with all safety directives • No anticipated increase to bird-aircraft strikes; flight activities would all occur above 3,000 feet AGL; less than 5 percent of bird-strikes occur above this altitude • Statistically estimated years between Class A mishaps for F-16s would change from 1 in 139 years to 1 in 6.4 years but would still pose minimal risk 	<ul style="list-style-type: none"> • Training operations are performed in accordance with applicable Air Force safety regulations • ATCAA floor above altitude 95 percent of birds fly; bird-aircraft strikes would remain low • Statistically estimated years between Class A mishaps for F-16s would remain minimal at 1 in 139 years
LAND USE, RECREATION, AND VISUAL	
<ul style="list-style-type: none"> • Land status and land use patterns would not be altered • Sonic booms would not adversely impact land use • Noise heard in wilderness and wilderness study areas would increase, but remain at low subsonic (<45 DNL) and supersonic (49 CDNL) levels • Visual observance of contrails in ATCAA would be expected to increase; contrails would not alter BLM visual classifications 	<ul style="list-style-type: none"> • Land status and management to remain unchanged • No sonic booms • Noise levels in wilderness areas would remain below DNL 45 dB • Few contrails could be observed due to limited operations in ATCAA
BIOLOGICAL RESOURCES	
<ul style="list-style-type: none"> • No federally listed plant or animal species exist under the proposed airspace; no impact anticipated • Wildlife would habituate to low-levels of subsonic noise and to noise generated by sonic booms occurring at low frequencies (approximately one boom every two flying days) • No impact to wildlife or vegetation from chaff and flare use or residual material • No wetlands occur within the affected region 	<ul style="list-style-type: none"> • No federally listed plant or animal species exist under the proposed airspace • Condition of vegetation, wildlife, and wetlands would remain at status quo • Low subsonic noise levels from ATCAA operations would not affect wildlife • No change

Table ES-1 Comparison of Alternatives by Resource and Potential Impact (con't)	
<i>Proposed Action</i>	<i>No-Action Alternative</i>
CULTURAL RESOURCES	
<ul style="list-style-type: none"> • No effects on 3 National Register properties located under the MOA/ATCAA • Vibrations from sonic booms would have a negligible impact to historic structures • No effect on traditional resources as none identified under the airspace • Impacts to cultural resources from fire due to chaff and flares or aircraft mishap would not be anticipated 	<ul style="list-style-type: none"> • No effect on any National Register properties • No sonic booms • No known traditional resources • No change
SOCIOECONOMICS	
<ul style="list-style-type: none"> • General aviation would remain unchanged under visual flight rule conditions • No anticipated impacts to development projects in the region 	<ul style="list-style-type: none"> • Socioeconomic conditions would remain unchanged • No change; status quo
ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN	
<ul style="list-style-type: none"> • No disproportionate impacts expected due to rarity of events at a single location • Subsonic noise would remain below DNL 45 dB ; supersonic noise would remain below CDNL 49 dB • Sonic booms could be heard at McGill Elementary; no adverse impacts to children expected 	<ul style="list-style-type: none"> • Less than 200 persons under the ATCAA airspace • Subsonic noise would remain below DNL 45 dB • No sonic booms
AMERICAN INDIAN CONCERNS	
<ul style="list-style-type: none"> • No anticipated impact to traditional cultural ceremonies or resources from subsonic noise or sonic booms as described under the proposed action 	<ul style="list-style-type: none"> • Areas of concern to American Indians would remain unchanged

TABLE OF CONTENTS

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
1.0 PURPOSE AND NEED FOR THE ACTION	1-1
1.1 INTRODUCTION	1-1
1.2 BACKGROUND FOR THE PURPOSE AND NEED	1-3
1.2.1 Hill AFB	1-3
1.2.2 Utah Test and Training Range	1-4
1.2.3 F-16 Training Activities in UTTR	1-4
1.2.4 Limitations on Availability of UTTR	1-7
1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION	1-9
1.4 NEED FOR THE PROPOSED ACTION	1-10
1.5 LEAD AND COOPERATING AGENCIES	1-10
1.6 ORGANIZATION OF THIS EIS	1-11
2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES	2-1
2.1 ALTERNATIVE IDENTIFICATION PROCESS	2-2
2.1.1 Alternative Identification Criteria and Application	2-2
2.1.2 Alternatives Considered But Not Carried Forward	2-9
2.1.3 Alternatives Analyzed in this EIS	2-11
2.2 PROPOSED ACTION	2-12
2.2.1 Establishment of the White Elk MOA	2-12
2.2.2 Training Operations in the Proposed White Elk MOA and Existing Currie/Tippet ATCAA	2-15
2.2.3 Authorization of Supersonic Flight in the Currie/Tippet ATCAA	2-22
2.2.4 Use of Chaff and Flares	2-24
2.3 NO-ACTION ALTERNATIVE	2-26
2.3.1 UTTR Airspace Structure	2-26
2.3.2 Training Operations in the Currie/Tippet ATCAA	2-27
2.3.3 Supersonic Flight	2-27
2.3.4 Use of Chaff and Flares	2-28
2.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS	2-28
2.4.1 Regulatory Requirements	2-28
2.4.2 Cooperating Agency and Intergovernmental Notification	2-30
2.4.3 Public Involvement Process	2-31
2.5 SUMMARY OF IMPACTS	2-32

3.0	AFFECTED ENVIRONMENT	3-1
3.1	ANALYSIS APPROACH	3-1
3.1.1	Definition of Baseline.....	3-1
3.1.2	Affected Areas	3-2
3.1.3	Affected Environment and Resources Analyzed	3-2
3.1.4	Resources Not Carried Forward for Detailed Analysis	3-2
3.2	AIRSPACE AND AIRCRAFT OPERATIONS	3-7
3.2.1	Utah Test and Training Range Airspace.....	3-7
3.2.2	Civilian Aircraft Operations	3-10
3.3	NOISE.....	3-12
3.3.1	Aircraft Noise Assessment Methods.....	3-13
3.3.2	Assessing Aircraft Noise Effects	3-15
3.3.3	Affected Environment.....	3-17
3.4	SAFETY	3-23
3.4.1	Ground Safety	3-23
3.4.2	Flight Safety.....	3-29
3.5	LAND USE, RECREATION, AND VISUAL	3-32
3.5.1	Land Use.....	3-33
3.5.2	Recreation and Visual Resources.....	3-37
3.6	BIOLOGICAL RESOURCES	3-39
3.6.1	Vegetation.....	3-39
3.6.2	Wildlife	3-40
3.6.3	Special-Status Species	3-41
3.6.4	Wetlands and Jurisdictional Waters of the United States	3-42
3.7	CULTURAL RESOURCES	3-42
3.7.1	Definition of Cultural Resources	3-42
3.7.2	Evaluation Approach	3-43
3.7.3	Affected Environment.....	3-47
3.8	SOCIOECONOMICS	3-51
3.8.1	Population	3-51
3.8.2	Employment and Earnings.....	3-51
3.9	ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN.....	3-54
3.9.1	Minority and Low-Income Populations	3-55
3.9.2	Protection of Children.....	3-56
3.10	AMERICAN INDIAN CONCERNS.....	3-56
3.10.1	Laws, Regulations, and Executive Orders	3-57
3.10.2	Affected Environment.....	3-59
3.10.3	Issues and Concerns Raised During Consultation	3-63

4.0	ENVIRONMENTAL CONSEQUENCES	4-1
4.1	INTRODUCTION	4-1
4.2	AIRSPACE AND AIRCRAFT OPERATIONS	4-1
4.2.1	Proposed Action.....	4-1
4.2.2	No-Action Alternative	4-3
4.3	NOISE.....	4-4
4.3.1	Proposed Action.....	4-4
4.3.2	No-Action Alternative	4-11
4.4	SAFETY	4-11
4.4.1	Proposed Action.....	4-11
4.4.2	No-Action Alternative	4-17
4.5	LAND USE, RECREATION, AND VISUAL RESOURCES	4-17
4.5.1	Proposed Action.....	4-17
4.5.2	No-Action Alternative	4-19
4.6	BIOLOGICAL RESOURCES	4-20
4.6.1	Proposed Action.....	4-20
4.6.2	No-Action Alternative	4-22
4.7	CULTURAL RESOURCES	4-23
4.7.1	Proposed Action.....	4-24
4.7.2	No-Action Alternative	4-26
4.8	SOCIOECONOMICS	4-26
4.8.1	Proposed Action.....	4-26
4.8.2	No-Action Alternative	4-28
4.9	ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN.....	4-28
4.9.1	Proposed Action.....	4-28
4.9.2	No-Action Alternative	4-30
4.10	AMERICAN INDIAN CONCERNS.....	4-30
4.10.1	Proposed Action.....	4-30
4.10.2	No-Action Alternative	4-32
5.0	CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES.....	5-1
5.1	CUMULATIVE EFFECTS	5-1
5.1.1	Definition of Cumulative Effects.....	5-1
5.1.2	Scope of Cumulative Effects Analysis	5-2
5.1.3	Cumulative Effects of Reasonably Foreseeable Actions	5-2
5.2	ASSESSMENT OF CUMULATIVE EFFECTS BY RESOURCE	5-4
5.3	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES.....	5-7

REFERENCES CITED	1
PERSONS AND AGENCIES CONTACTED	1
LIST OF PREPARERS AND CONTRIBUTORS	1
DISTRIBUTION LIST	1
INDEX	1
APPENDIX A DRAFT EIS COMMENTS AND RESPONSES	A-1
APPENDIX B PUBLIC PARTICIPATION SUMMARY	B-1
APPENDIX C CONSULTATION	C-1
APPENDIX D CHARACTERISTICS OF CHAFF	D-1
APPENDIX E CHARACTERISTICS OF FLARES	E-1
APPENDIX F NOISE	F-1
APPENDIX G NOISE CALCUATIONS	G-1
APPENDIX H STATE AND FEDERAL LISTED SPECIES	H-1
APPENDIX I COOPERATING AGENCY CORRESPONDENCE	I-1

LIST OF FIGURES

Figure 1-1	Existing and Proposed Utah Test and Training Range Airspace	1-2
Figure 1-2	Types of Training Airspace	1-5
Figure 2-1	Air Traffic Flow on the West Side of UTTR.....	2-6
Figure 2-2	Air Traffic Flow in Potential Airspace Locations.....	2-11
Figure 2-3	Proposed White Elk MOA and Existing UTTR Airspace	2-13
Figure 2-4	Air Refueling Track AR-659 and Supersonic Operating Areas	2-21
Figure 2-5	Representative Supersonic Training Scenario for F-16 in White Elk MOA and Currie/Tippet ATCAA	2-23
Figure 3.2-1	Schematic of Airspace Classes	3-11
Figure 3.3-1	Noise Analysis Locations and Baseline Subsonic Noise Levels	3-19
Figure 3.4-1	Ely Field Office Fire Management Units.....	3-25
Figure 3.4-2	Elko Field Office Fire Management Units.....	3-27
Figure 3.5-1	Land Status and Ownership	3-34
Figure 3.8-1	Socioeconomic Affected Environment.....	3-52
Figure 3.10-1	Indian Reservations and Colonies Underneath and Adjacent to Proposed White Elk MOA and Currie/Tippet ATCAA.....	3-64
Figure 4.3-1	Projected Supersonic Noise Levels (CDNL)	4-9

LIST OF TABLES

Table ES-1	Comparison of Alternatives to Resource and Potential Impact	ES-8
Table 1-1	F-16 Required RAP Training Mission Activities	1-6
Table 1-2	Correspondence with the FAA.....	1-11
Table 2-1	Structure and Altitude: Proposed White Elk MOA and Currie/Tippet ATCAA	2-14
Table 2-2	Representative Elevations for Locations Under the Currie/Tippet ATCAA and/or Proposed White Elk MOA.....	2-14
Table 2-3	Baseline and Proposed Sortie-Operations: Combined White Elk MOA and Currie/Tippet ATCAA.....	2-15
Table 2-4	Transient Aircraft with the Potential to Operate in White Elk MOA and Currie/Tippet ATCAA.....	2-16
Table 2-5	Operational Parameters for Baseline and Proposed Sortie-Operations.....	2-17
Table 2-6	Altitude Profiles: Baseline and Proposed	2-19
Table 2-7	F-16 Missions and Refueling Events	2-19
Table 2-8	Proposed Supersonic Events in Currie/Tippet ATCAA	2-22
Table 2-9	Proposed Annual Chaff and Flare Use.....	2-24
Table 2-10	Comparison of Alternatives by Resource and Potential Impact	2-33

Table 3.1-1	Resources Analyzed in the Environmental Impact Analysis Process.....	3-3
Table 3.3-1	Noise Analysis Locations	3-18
Table 3.3-2	Representative Sound Exposure Levels (SEL) for Various Aircraft Types and Flight Altitudes	3-20
Table 3.3-3	Subsonic Noise Calculations for Locations Under or Near the Currie/Tippet ATCAA	3-21
Table 3.4-1	Class A Mishap Rates for Specific Aircraft per 100,000 Flight Hours	3-30
Table 3.5-1	Land Status under the Proposed White Elk MOA and Currie/Tippet ATCAA in Acres.....	3-33
Table 3.5-2	Wilderness Areas and WSAs Underlying the Proposed White Elk MOA and Currie/Tippet ATCAA in Acres.....	3-37
Table 3.5-3	Visual Resource Management Degree of Contrast Criteria.....	3-39
Table 3.7-1	Possible Damage to Structures From Sonic Booms.....	3-46
Table 3.7-2	National and State Register Sites in Elko and White Pine Counties, Nevada	3-47
Table 3.7-3	National Register-Eligible Cultural Resources within Lands beneath the Affected Airspace	3-48
Table 3.7-4	Ghost Towns within Lands beneath the Affected Airspace.....	3-50
Table 3.9-1	Minority and Low-Income Populations in Elko County and White Pine County	3-55
Table 3.10-1	Self-Identified Goshute Groups Visited by Powell and Ingalls in 1872.....	3-60
Table 3.10-2	Treaties Negotiated with Shoshonean Speaking Groups to West and South.....	3-61
Table 3.10-3	American Indian Groups Contacted.....	3-65
Table 4.3-1	Relation Between Annoyance, DNL, and CDNL	4-5
Table 4.3-2	Baseline and Projected Subsonic Noise Levels for the Locations Under the Proposed White Elk MOA and Currie/Tippet ATCAA.....	4-6
Table 4.3-3	Baseline and Projected Supersonic Noise Levels for the Locations Under the Proposed White Elk MOA and Currie/Tippet ATCAA.....	4-7
Table 4.3-4	Sonic Boom Frequency Under the Proposed White Elk MOA and Currie/Tippet ATCAA.....	4-8
Table 4.4-1	Projected Class A Mishaps – Proposed Action.....	4-15
Table 4.9-1	Minority and Low-Income Populations Under the Currie/Tippet ATCAA and White Elk MOA with Noise Greater than 46 CDNL	4-29

1.0 PURPOSE AND NEED FOR THE ACTION

1.0 PURPOSE AND NEED FOR THE ACTION

1.1 INTRODUCTION

The United States Air Force (Air Force), in cooperation with the Federal Aviation Administration (FAA), proposes to establish a new military operations area (MOA) underlying existing training airspace at the western edge of the Utah Test and Training Range (UTTR) (Figure 1-1). The MOA, identified as the White Elk MOA, would create additional special use airspace in northeastern Nevada in order to provide training opportunities for F-16 pilots not consistently available in the existing UTTR airspace. Extending from 14,000 feet to 18,000¹ feet above mean sea level (MSL), the MOA would directly underlie the existing Currie and Tippet Air Traffic Control Assigned Airspace (ATCAA) with the exception of the southwest corner of the Tippet ATCAA.² The Currie/Tippet ATCAA would extend from 18,000 to 58,000 feet MSL when activated. The Air Force proposal would include conducting training flights in the White Elk MOA, increased operations in the existing ATCAA airspace, use of chaff and flares in the MOA and ATCAA, and authorization for supersonic flight in the overlying ATCAA.

Due to scheduling priorities and testing demands, existing UTTR airspace cannot support the full training requirements of the F-16 aircraft assigned to the 388th Fighter Wing (388 FW) at Hill Air Force Base (AFB). The F-16 pilots must forego 10 to 15 percent of required training activities (Air Force 2006) due to these factors thereby affecting their combat-ready status. The proposed action would provide additional airspace connected to UTTR sufficient to support the full F-16 training activities. As required by the National Environmental Policy Act (NEPA) and promulgated under the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1502.14[d]), this Environmental Impact Statement (EIS) analyzes the proposed action and the no-action alternative. The alternative identification process conducted by the Air Force and FAA yielded no reasonable alternatives to the proposed action.



¹ The FAA charts the upper limits of MOAs as “up to but not exceeding 17,999 feet MSL.” For purposes of this EIS, the upper limit of the MOA will be further described as 18,000 feet MSL to simplify the nomenclature.

² The Currie and Tippet ATCAAs will be further referenced as the Currie/Tippet ATCAA.

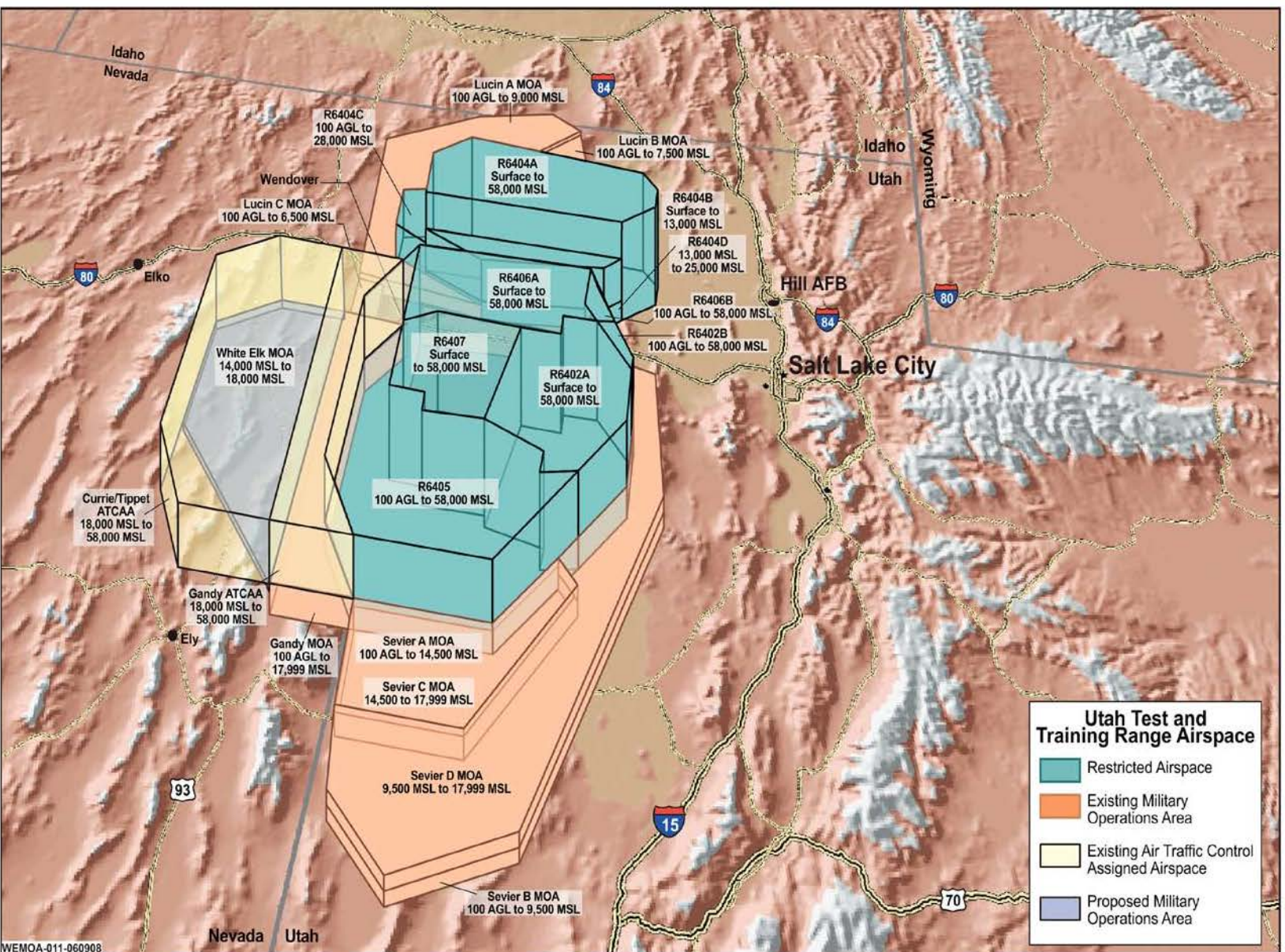


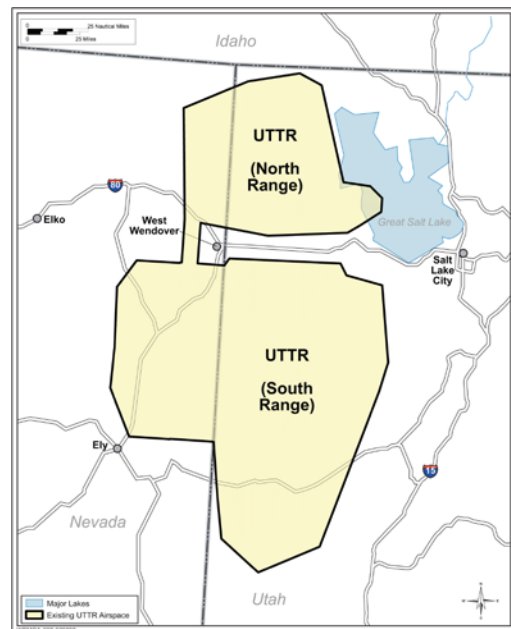
Figure I-1 Existing and Proposed Utah Test and Training Range Airspace

1.2 BACKGROUND FOR THE PURPOSE AND NEED

As a preface to this proposal, the Air Force recognized a requirement to establish and configure airspace to permit full training for the 388 FW with the current capabilities of the F-16 aircraft and its systems. The F-16 pilots at Hill AFB form an integral part of the United States Air Force's Aerospace Expeditionary Force (AEF), expected to deploy to and fight around the world. Success in combat means F-16 pilots must confront the world's most sophisticated hostile air-to-air tactics and anti-aircraft systems. To ensure such success, pilots must train as they would fight, and they require sufficient access to training airspace that provides a realistic combat environment in order to complete defined requirements and ensure combat readiness. State-of-the-art aerial combat, close air support, and surface attack missions of the F-16 require highly-honed offensive and defensive pilot skills best practiced at operationally realistic speeds and altitude regimes. All training events and tactics need to support achieving combat readiness. In turn, achieving combat readiness requires access to training airspace configured and sized to allow pilots to practice tactics at supersonic speeds and make full use of the F-16's capabilities.

1.2.1 Hill AFB

Hill AFB, located in northern Utah, is home to two F-16 fighter wings, the 388 FW of Headquarters Air Combat Command (ACC), and the 419 FW of the Air Force Reserve Command (AFRC). Prior to July 2007, the two fighter wings remained separate organizations with each maintaining and flying their own inventory of F-16 aircraft. However, pursuant to recommendations of the Defense Base Closure and Realignment Commission (DBCRC 2005), the Air Force realigned the F-16 aircraft from the 419 FW to other installations. This realignment responded to reductions in defense funding, aircraft inventories, and experienced fighter pilots. Thus, pilots and maintainers of the 419 FW became fully integrated with the 388 FW to form a joint flying mission at Hill AFB using a single set of aircraft.³ In total, these two units operate 72 F-16 aircraft.



Developing and maintaining fighter wings capable of day, night, and all-weather combat operations worldwide forms the mission of the 388 FW. As a component of the AEF, these wings have consistently supported combat operations overseas including

³ The 419 FW is subsumed under the 388 FW. For this EIS, only the 388 FW will be referenced further.

Operation Noble Eagle and Operation Iraqi Freedom in southwest Asia over the past decade. These actions involved flying thousands of sorties,⁴ particularly combat air patrols. For example, the 388 FW flew over 1,400 sorties in support of the Iraq conflict. However, none of these combat sorties fulfill training requirements for Ready Aircrew Program (RAP) or other qualifications (Air Force 1998). Rather, once the deployment ends, such training must be “made-up” using assets like UTTR.

1.2.2 Utah Test and Training Range

The 388 FW trains primarily in the UTTR airspace which consists of 10 restricted airspace units, 8 MOAs, and 2 ATCAAs linked together to form a cohesive complex (Figure 1-2). UTTR and its associated training airspace lie about 50 miles west of the base (refer to Figure 1-1), overlying 12,574 square nautical miles (nm) in Utah and Nevada. Minimum and maximum altitudes range from the surface to 58,000 feet above MSL, respectively. UTTR consists of a North Range and a much larger South Range (refer to Figure 1-2). Divided by Interstate 80, these two portions of UTTR both support testing and training. Each range supports tactical training targets and test target areas, although the South Range contains more test target areas. With these airspace units and underlying range assets, UTTR consists of a highly-valued national resource for testing and training by the Air Force.

To that end, the Department of Defense (DoD) also identified UTTR as a Major Range and Test Facility Base (MRTFB) (DoD 2002). Under DoD Directive 3200.11 (DoD 2002), testing and evaluation activities receive scheduling and asset priority over all other uses. Training, while considered important, represents a secondary function at MRTFB’s such as UTTR. UTTR must test both new weapons as well as those with a finite shelf-life. Test and evaluation programs conducted at UTTR include the F-22 Raptor, cruise missiles, and Joint Direct Attack Munitions (JDAMs); all of these programs demand significant use of UTTR airspace and ground assets. Use of UTTR airspace is expected to increase by 50 percent in the next 2 years due to demand for training and testing of weapons with large weapons footprints like JDAMs (Air Force 2006a).

1.2.3 F-16 Training Activities in UTTR

All F-16 pilots in the 388 FW must achieve combat ready status. To accomplish this goal, they must successfully conduct specifically defined sorties and events in accordance with Air Force Instruction (AFI) 11-2F-16, Volume 1, *F-16 Aircrew Training*, May 1998. This combat readiness program, as developed by ACC’s Training Support Squadron, infuses realism in training for both air-to-air and air-to-ground missions. To meet RAP requirements, the F-16 pilots fly a defined number of sorties that accomplish specific mission types, tactics, and use of defensive countermeasures (e.g., chaff and flares).

⁴ A sortie is the flight of a single aircraft consisting of a takeoff, mission, and landing.

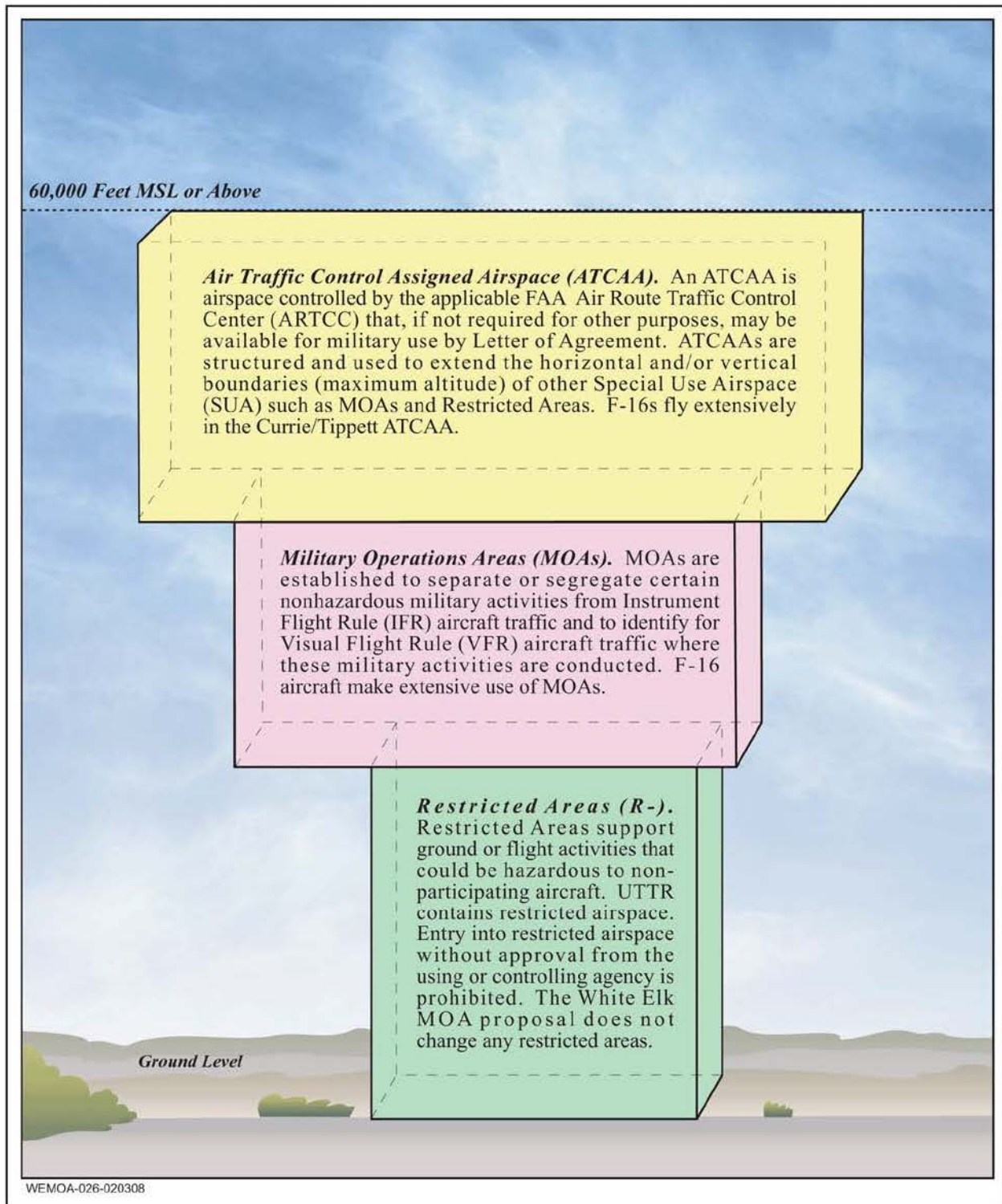


Figure 1-2 Types of Training Airspace

Pilots must complete both basic mission-capable and combat ready training, and these training activities require appropriate airspace to accomplish. Table 1-1 presents the predominant F-16 training activities required under RAP.

Table 1-1 F-16 Required RAP Training Mission Activities	
Activity	Tasks
TIs	Normal – Two 4-ship group tactical intercepts, lead and formation flying; fly north-south Low – One 4-ship group High – Three 4-ship groups split
CAS	Air support for ground based offensive and defensive operations; work with Joint Terminal Attack Controllers (JTACs) ¹
Medium Altitude Training DCA/OCA	Offensive and defensive operations, defensive response, defensive countermeasure (chaff/flares) use, medium to high and high to medium altitude intercepts, combat air patrol against medium altitude adversaries
SAT	4 vs. 4 high altitude tactical weapons delivery and escape maneuvers (day and night)
Aircraft Handling Characteristics	Maneuverability, break turns, high angle of attack maneuvering, acceleration maneuvering gun tracking, offensive and defensive positioning, refueling, stall recovery
Basic Fighter Maneuvers	Recognize all offensive/defensive weapons situations, defeat enemy weapons employment, offensive/defensive maneuvering, visual missile defense, beyond visual defense, maneuvering for weapons use, defensive countermeasures (chaff and flares) use
Air Combat Maneuvers	Multi-aircraft formations and tactics, systems check, G-force awareness, 2 vs. 4 and 4 vs. 6 aircraft intercepts, combat air patrol, defense of airspace sector from composite force attack, intercept and destroy bomber aircraft, avoid adversary fighters
Night Operations	Normal, low, and high usage, aircraft intercepts and defense, defensive countermeasure (chaff/flare) use, maneuvering for weapons use
Dissimilar Air Combat Tactics	Multi-aircraft and multi-adversary defense and combat air patrol, avoid adversary fighters, strike-force rendezvous and protection
Mission Employment	Air refueling, combat air patrol, defensive countermeasure (chaff/flare) use

Notes: TI = Tactical Intercept; OCA = Offensive Counter Air; SAT = Surface Attack Tactics; CAS = Close Air Support; DCA = Defensive Counter Air.

¹JTACs are responsible for directing combat aircraft engaged in close air support and other offensive air operations. This training is simulated on the ground utilizing Hill AFB personnel riding in vehicles being tracked via aircraft operating in the airspace above.

As indicated by their required missions, F-16s are multi-role fighter aircraft with operational characteristics designed to support both air-to-air and air-to-ground training missions. To conduct this training, the F-16s need airspace of sufficient horizontal and vertical size to permit the air-to-ground maneuvering, air combat, and multi-ship operations. Altitude regimes employed by F-16s in training range from below 2,000 feet above ground level (AGL) to over 40,000 feet MSL. As a versatile aircraft, F-16s need to train in an environment that permits application of their full operational characteristics: agility, maneuverability, supersonic speed, diverse weapons load, and defensive capability. To operationalize these characteristics, training assets must meet the following requirements:

1. Offer adequately-sized airspace to employ the full spectrum of combat tactics;
2. Provide opportunities to engage ground-based threats and adversary aircraft in combat situations;

3. Permit air-to-ground mission (e.g., CAS, anti-armor) against a variety of targets including time-sensitive and urban targets;
4. Include airspace that allows supersonic flight as an essential part of combat tactics; and
5. Allow the use of defensive countermeasures, particularly chaff and flares, throughout the range of combat training operations.

Moreover, the F-16 pilots need daily access to training airspace that fulfills these live requirements. Under current conditions, the 388 FW needs these airspace assets in order to complete a combined total of 13,000 sorties annually in fulfilling RAP requirements. Several factors including weather, maintenance problems, and pilot progression, limit the effectiveness of about 10 percent of total sorties for RAP qualification. These factors and limits on UTTR availability (discussed below) reduce total sorties flown by the 388 FW to below levels necessary to accomplish RAP qualification and achieve combat-ready status. For example, the F-16 pilots flew only 11,900 sorties in 2003, well below the amount needed to meet RAP requirements. Approximately 10 to 15 percent of RAP requirements cannot be met due to scheduling conflicts and limitations. This trend continues currently, creating a situation where some F-16 pilots cannot maintain or achieve combat-ready status.

1.2.4 Limitations on Availability of UTTR

The need for the proposed White Elk MOA stems from the fact that pilots from the 388 FW cannot access UTTR airspace consistently enough to achieve training requirements. This problem leads to a failure of pilots to achieve combat-ready status. As noted previously, testing activities at UTTR receive priority scheduling, dominating available time in the airspace. Similarly, training activities not supportive of the 388 FW requirements (i.e., F-22A training) also affect availability of UTTR. Due to their unique capabilities, F-22A aircraft dominate the use of airspace units like those at UTTR (Air Force 1999a).

Cruise missile testing forms the predominant activity affecting availability of UTTR. As an MRTFB, UTTR has the capability and the unique responsibility for testing the United States' fleet of cruise missiles (Air Force 2000) among other weapons systems. UTTR offers a unique environment for cruise missile testing; it supports the sufficient airspace size for the safety footprint and the necessary targets and telemetry to yield meaningful test results.

Each year, the Air Force conducts reliability and performance evaluations of its stock of air-to-ground cruise missiles at the UTTR. The tests follow a realistic scenario to evaluate not only the missile itself but the entire missile employment process. Units involved in the test, plan and execute the mission as an actual combat event. While the missile flight paths avoid certain areas and must overfly others to ensure proper testing, the tests can and do utilize the entire South Range and exclude all non-test activities.

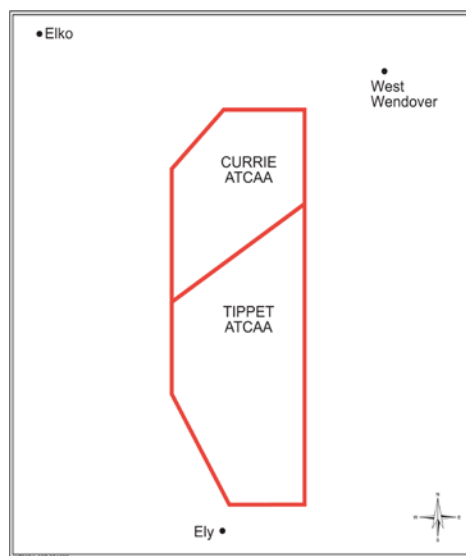
All tests involve air launch of a cruise missile from a B-52 aircraft of the 49th Test and Evaluation Squadron (TES) at Barksdale AFB, Louisiana. The 49 TES, which coordinates the cruise missile test activities with the 388th Range Squadron of Hill AFB (Air Force 2000), conducts up to eight cruise missile tests at UTTR each year; these tests are planned and scheduled one year in advance. When scheduling a cruise missile test, the 49 TES reserves the entire UTTR South Range for up to one week for a single test and two weeks for consecutive testing. Each event also includes a second week for backup. Therefore, cruise missile tests result in closure of the South Range for all other activities for up to 16 weeks per year. Portions of the North Range may be used also from time to time. On the rare occasion of a cancelled cruise missile test, the range becomes available to other users. However, the tests normally preclude other test and training activities. The 388 FW, as the entity responsible for long-term range scheduling, never schedules F-16 activity within the window reserved for a cruise missile test. As such, 388 FW pilots cannot conduct needed training during these 16 weeks.

Since the cruise missile tests dominate the South Range, other testing and training (non 388 FW) activities receive priority scheduling for the North Range. Consequently, these activities limit the potential for F-16 training in the North range as well.

Other priority activities also limit the availability of UTTR. The airspace manager and schedulers for the 388 FW indicate that these activities (mostly testing) effectively preclude consistent and reliable use of UTTR for 17 weeks per year in addition to the time dominated by cruise missile tests (personal communication, Angus 2007). Activities affecting availability of UTTR include:

- Testing and training for ordnance with large weapons footprints such as the JDAMs; UTTR represent one of two U.S. ranges able to accommodate such weapons.
- Employment of large offset weapons; again, UTTR comprises only one of two ranges that can support this activity and demand is expected to increase total use of UTTR by 50 percent in 2 years.
- Substantial operations by B-1, B-2, and B-52 Bombers for weapons training.
- Flow of testing and training operations from the Nevada Test and Training Range (NTTR) to UTTR to meet combat Air Force needs; F-22 test and evaluation efforts at NTTR dominate that airspace and lead to occasional capacity issues that drive operations to UTTR.

Overall, priority activities preclude access by the 388 FW to all or most of UTTR airspace for 33 weeks per year. Such availability limitations reduce the capability of 388 FW pilots to complete RAP qualification and achieve combat-



ready status. For these reasons, the F-16 pilots need consistent and reliable access to airspace that supports needed combat training when existing UTTR airspace is unavailable. Establishment of combat training airspace in eastern Nevada would greatly assist in solving long-term mission training requirements of the 388 FW and the Air Force.

1.3 PURPOSE FOR THE PROPOSED ACTION



F-16 Fighting Falcons in UTTR

The purpose of this Air Force proposal is to provide airspace in which the F-16s of the 388 FW can conduct combat training operations in order to fulfill RAP requirements currently not being met through use of the existing UTTR airspace. Establishment of additional airspace linked to the existing UTTR would permit the 388 FW to schedule and use airspace consistently and reliably without limitations imposed by test and evaluation priorities. In this way, the 388 FW would have unencumbered access to airspace that, in

combination with existing UTTR airspace and ground assets, would meet all five requirements defined in section 1.2.3. Briefly summarized, these requirements include:

- Adequately-sized airspace
- Ground-based threats and adversary aircraft
- Variety of targets for air-to-ground missions
- Authorized supersonic flight
- Use of chaff and flares

While the UTTR currently offers these characteristics, the limitations on accessibility make it necessary for establishment of new airspace that also supports these requirements. Therefore, the proposed action would add additional MOA airspace to the existing UTTR complex. To fulfill the purpose of consistent and reliable availability of the airspace, the 388 FW would receive priority scheduling for the MOA, particularly during cruise missile or weapon system tests. The availability of exclusive use airspace for the 388 FW during periods of test and evaluation activities would ensure: the wing meets all RAP training requirements each year; all qualified F-16 pilots would achieve combat-ready status; and shifts in the nature and number of other operations at UTTR would not limit the training regimen of the 388 FW.

By linking the proposed MOA to an existing, overlying ATCAA, the proposed action would offer sufficient airspace to conduct air-to-air training with multiple adversary and friendly aircraft. Although no ordnance would be released within the proposed airspace or associated ATCAA, pilots could employ all other elements of air-to-ground missions. Natural features and the built environment would offer an abundance of simulated targets in order to ensure fulfillment of those training requirements.

Because the purpose of the proposed action includes supporting all of the F-16 training requirements, it includes authorizing supersonic flight in the overlying ATCAA. Supersonic flight allows the pilots to engage and disengage at a rapid rate simulating conditions of real-world conflict. In addition, use of chaff and flares as defensive countermeasures in the MOA/ATCAA airspace would fulfill another training requirement. Chaff and flares provide effective defensive countermeasures against both ground threats and enemy aircraft, so their proper employment within a combat mission forms an essential skill for pilots.

1.4 NEED FOR THE PROPOSED ACTION

As described previously, the F-16 pilots from the 388 FW cannot consistently and reliably complete the required sorties, RAP events, and combat-ready status qualifications due to lack of availability of appropriate airspace. Limitations on availability derive from Air Force directed priorities for test and evaluation activities at UTTR that effect F-16 opportunities to train for up to 33 weeks per year. UTTR serves as an MRTFB, and represents a national unique asset for test and evaluation of weapons systems. Other missions receive lesser priority in scheduling use of UTTR.

Given these factors, the Air Force needs to establish MOA airspace that supports the 388 FW's compliance with AFI 11-2F-16, Volume 1, *F-16 Aircrew Training* to maintain combat readiness. To conduct these various training missions, the F-16 requires blocks of airspace sufficiently large to match the operational characteristics and requirements of the aircraft. In addition, the F-16 pilots need to train using the full range of capabilities of the aircraft, including supersonic flight and chaff and flare employment. The White Elk MOA and activities in the MOA/ATCAA, as proposed, would fulfill these needs.

1.5 LEAD AND COOPERATING AGENCIES

The Air Force is the proponent for the White Elk MOA proposal and is the lead agency for the preparation of the EIS. The FAA is a cooperating agency. As defined in 40 CFR §1508.5, a cooperating agency...

means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment.

Congress has charged the FAA with administering all navigable airspace in the public interest as necessary to ensure the safety of aircraft and the efficient use of such airspace. As the agency with jurisdiction by law and special expertise with respect to those portions of the White Elk MOA proposal regarding changes in the configuration of the airspace and establishment of new airspace, the FAA is

participating as a cooperating agency. As a cooperating agency, FAA has participated in public scoping and preparation of the Draft EIS. Their input has been critical in developing the proposed action. Table 1-2 presents a list of relevant correspondence exchanged between the Air Force and the FAA (Appendix I).

Table 1-2 Correspondence with the FAA			
<i>From</i>	<i>To</i>	<i>Letter Date</i>	<i>Subject</i>
Air Force	FAA	September 28, 2007	Request for participation with FAA as a cooperating agency
FAA	Air Force	October 10, 2007	Acceptance of participation as a cooperating agency

The FAA cooperated with the Air Force on preparation of the Final EIS. The Air Force's decision on the proposed White Elk MOA and activities in the MOA/ATCAA will be documented in an Air Force Record of Decision (ROD). FAA will review the airspace proposal submitted by the Air Force in accordance with its policies and procedures, including FAA Order 1050.1 and 7900.26. The Air Force's goal in its cooperative effort with the FAA is for this EIS to fulfill the NEPA requirements of both agencies.

1.6 ORGANIZATION OF THIS EIS

This EIS is organized into the following chapters and appendices: Chapter 1.0 describes the purpose and need of the proposed establishment of a new MOA underlying existing training airspace at the western edge of the UTTR in eastern Nevada. Detailed descriptions of the proposed action and no-action alternative are provided in Chapter 2.0. Chapter 2.0 also discusses alternatives considered but not carried forward for further analysis. Finally, Chapter 2.0 provides a comparative summary of the effects of the alternatives with respect to the various environmental resources.

Chapter 3.0 describes the existing conditions of environmental resources that could be affected by the proposed action. Chapter 4.0 addresses the environmental consequences to those resources that could result from implementing the proposed action or no-action alternative. Chapter 5.0 addresses the cumulative effects of recent, past, present, and reasonably foreseeable actions that may be implemented in the Region of Influence. Chapter 5.0 also presents that relationship between short-term uses and long-term productivity identified for the resources affected, and the irreversible and irretrievable commitment of resources if the proposed action is selected. This EIS includes references cited; provides a list of the individuals and organizations contacted during the preparation of the EIS; includes a list of the persons who prepared this EIS; and contains a distribution list and index.

In addition to the main text, the following appendices are included: Appendix A, Draft EIS Comments and Responses; Appendix B, Public Participation Summary; Appendix C, Consultation; Appendix D, Characteristics of Chaff; Appendix E, Characteristics of Flares; Appendix F, Noise; Appendix G, Noise Calculations; Appendix H, State and Federal Listed Species; and Appendix I, Cooperating Agency Correspondence.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Air Force's proposal to establish the White Elk MOA underlying existing training airspace at the western edge of the UTTR. Establishing the White Elk MOA would address the training limitations affecting the ability of the F-16s of the 388 FW to complete RAP requirements and achieve combat-ready status. Creation of this MOA and linking it to the existing UTTR airspace would permit the 388 FW to consistently and reliably schedule and use a sufficiently-sized, cohesive block of airspace to regularly conduct the full range of F-16 training activities. No longer would the 388 FW encounter scheduling conflicts and reduced training sorties as a result of priority test and evaluation activities that dominate UTTR up to 33 weeks per year. Although no actual release of ordnance would occur during training in the White Elk MOA or overlying ATCAA, aircraft could conduct the full range of air-to-ground and air-to-air training missions needed to ensure success in combat. The new White Elk MOA, extending from 14,000 to 18,000 feet MSL, would underlie all but the southwest corner of the existing Currie/Tippet ATCAA in northeastern Nevada (refer to Figure 1-1). In total, the White Elk MOA would add about 1.4 percent to the total volume of UTTR airspace.

Addition of the airspace would permit sortie-operations¹ dispersed throughout the White Elk MOA and increased sortie-operations in the overlying ATCAA. The White Elk MOA and overlying ATCAA would support up to 9,200 sortie-operations by the F-16s from the 388 FW and 390 sortie-operations by other fighter aircraft. In supporting F-16 pilots to conduct required combat training missions such as CAS and tactical intercepts, this airspace proposal would also: 1) permit use of chaff and flares in the White Elk MOA and Currie/Tippet ATCAA; and 2) authorize supersonic flight above 18,000 feet MSL in the ATCAA.

In accordance with NEPA and CEQ guidelines, the Air Force identified preferred and environmentally preferred alternatives. The proposed action is the Air Force's preferred alternative; the no-action alternative is the environmentally preferred alternative. Section 2.1 describes the process used to identify the alternatives analyzed in this EIS, as well as those eliminated from further study. Section 2.2 presents the proposed action to establish the White Elk MOA and conduct associated activities. Section 2.3 presents the no-action alternative; the CEQ regulations (40 CFR 1502.14(d)) require analysis of the no-

¹ This EIS uses two terms to describe different aircraft flying activities: *sortie* and *sortie-operation*. Each has a distinct meaning and commonly applies to a specific set of activities in particular airspace units. A *sortie* consists of a single military aircraft from takeoff through landing. For this EIS, the term *sortie* is commonly used when summarizing an amount of flight activity from a base. A *sortie* can result in more than one *sortie-operation*. A *sortie-operation* comprises the use of one airspace unit (e.g., MOA, ATCAA) by one aircraft. Each time a single aircraft flies in a different airspace unit, one *sortie-operation* is counted for that unit. Thus during a single *sortie*, an aircraft may fly in several airspaces and produce a number of *sortie-operations*.

action alternative. The no-action alternative reflects the status quo and includes no changes to the existing airspace. This description also provides context for the proposed action which would link to the existing UTTR airspace.

2.1 ALTERNATIVE IDENTIFICATION PROCESS

DoD Directive 3200.11, *Major Range and Test Facility Base* (MRTFB), gives priority for scheduling and use of existing UTTR airspace to test and evaluation activities. Training requirements, like those for the F-16s of the 388 FW, receive secondary consideration under the directive, resulting in a reduced numbers of pilots maintaining combat-ready status. The existing UTTR, while large, offers no airspace where the 388 FW can reliably and consistently schedule and use to meet its training requirements. In order to remedy these problems and support required training, the Air Force developed criteria to evaluate potential reasonable alternatives. To identify alternatives that would meet the purpose and need, the Air Force determined that a reasonable alternative should:

- Utilize existing military training airspace to the extent reasonable while meeting the need;
- Establish new airspace linked to the existing UTTR within 150 nm of Hill AFB thereby minimizing transit time and maximizes training time per sortie.
- Ensure the 388 FW training operations receive priority so pilots can meet RAP requirements and achieve combat-ready status;
- Limit, to the extent possible, potential conflicts with civilian air traffic;
- Provide airspace of adequate size and volume to permit the 388 FW pilots to conduct the full range of required training; and
- Provide airspace that supports the training needs of the F-16s in terms of authorized activities, particularly supersonic flight and deployment of chaff and flares.

2.1.1 Alternative Identification Criteria and Application

The Air Force identified a set of six criteria that an airspace proposal must fulfill to support the 388 FW's needs. Using these criteria, the Air Force sought to define a proposed action and alternatives that would allow the 388 FW to meet training requirements. The following defines the criteria and details their application.

Criterion 1: Existing Military Airspace

Definition. Airspace comprises a valuable and finite national resource. The Air Force seeks to meet the need for the proposed action by using existing military airspace to the extent possible. To ensure benefits to all users of the National Airspace System, the FAA encourages the use of existing airspace by the

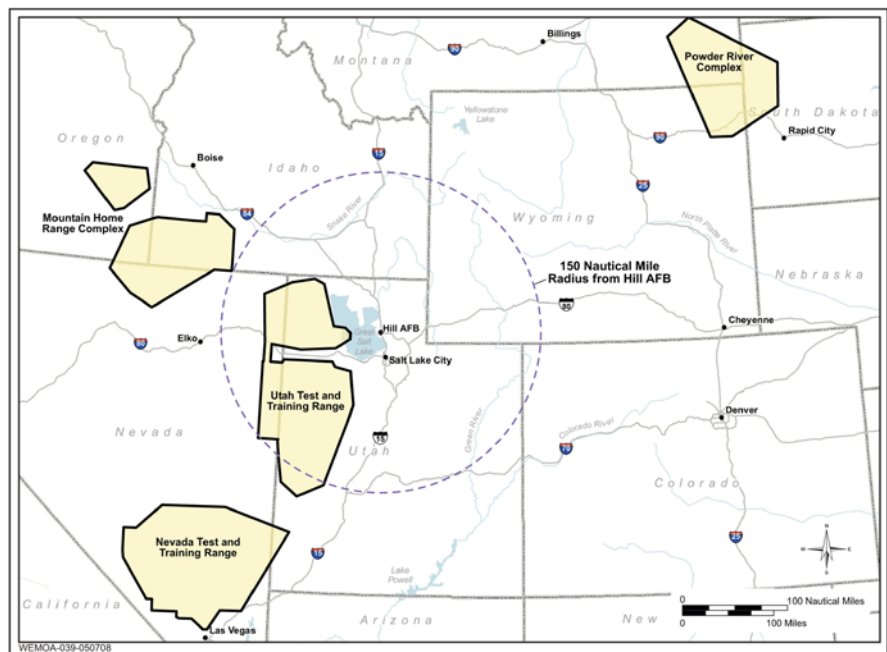
military. In developing the proposed action and alternatives, the Air Force evaluated the size, structure, and location of the existing UTTR MOAs and ATCAAs to maximize their utility.

Application of Criterion. This evaluation recognized that all of existing airspace in proximity to the location of the F-16s, Hill AFB, comprised part of UTTR. As previously demonstrated, test and evaluation operations dominate scheduling and use of the majority of UTTR (i.e., North and South Ranges), leaving minimal airspace and availability for 388 FW training. Only the Currie/Tippet ATCAA on the extreme western edge of UTTR offers available airspace not prioritized for use for test and evaluation, thereby fulfilling Criterion 1.

Criterion 2: Maximize Training Time/Minimize Transit Time

Definition. In defining a search area for suitable airspace, the Air Force recognized the need to maximize training time and minimize low-value transit time for the F-16s. Having to fly long distances to remote training airspace and return to Hill AFB would substantially limit available training time for the F-16s based at Hill AFB. These aircraft need to fly to the training airspace consistently, conduct training operations for 30 minutes or more, and return to base with adequate fuel reserves for safety. Average training sorties for the F-16s without refueling last approximately 1 hour. Evaluation of the flying range (fuel capacity) of the F-16s reveals that training airspace beyond 150 nm from the base reduces effective training time below minimum levels of 30 minutes or more (Air Force 1993).

Application of Criterion. Based on this threshold, the Air Force sought to identify existing airspace within a flying radius limit of 150 nm of Hill AFB. Other than UTTR, the search area contains no existing MOAs, Restricted Areas, ATCAAs, or similar special use airspace needed by the 388 FW. Effective and efficient combat training requires aircrews to expend available flying hours performing required training. Flying to other locations like NTTR in Nevada or the Mountain Home Range Complex (MHRC) in Idaho, expends finite flying hours on transit while providing minimal, if any, combat training. The



existing UTTR is the only airspace which fulfills Criterion 2 and must, therefore, form the foundation on which to build any proposed action or alternative with the exception of its southern portion, all of UTTR lies within 150 NM of Hill AFB. Furthermore, the western portion of the UTTR complex containing the Currie/Tippet ATCAA lies 120 to 140 nm from Hill AFB, within the required distance threshold.

Criterion 3: Prioritized Training Time

Definition. The 388 FW pilots need adequate training time in local airspace to fulfill RAP requirements and achieve combat-ready status. Under existing conditions, the 388 FW fails to complete approximately 10 to 15 percent of RAP requirements annually due to scheduling priorities for UTTR airspace (Air Force 2006a). As an MRTFB, UTTR must ensure scheduling priority for test and evaluation activities in accordance with DoD Directive 3200.11. For up to 33 weeks per year, these test and evaluation activities exclude training by the 388 FW in most of the UTTR airspace. Adherence to the RAP requirements means that the 388 FW must seek other airspace which it schedules and sets use priorities. Most importantly, this airspace must ensure the 388 FW reliable and consistent access and availability.

Application of Criterion. The primary factor driving the need for the proposed action is the 388 FW's lack of reliable and consistent access to UTTR airspace. As a result, only airspace controlled by Hill AFB and prioritized for use by the 388 FW would fulfill the need. Within UTTR, the North and South Ranges along with their associated airspace receive scheduling and use priority for testing and evaluation. The Currie/Tippet ATCAA, located at the western edge of UTTR, represents the only existing airspace managed and controlled by Hill AFB not primarily dedicated to test and evaluation activities. In terms of distance, the ATCAA lies roughly 120 nm distant from Hill AFB, well within the 150 nm distance needed to ensure effective training time. Therefore, the Currie/Tippet ATCAA represents the only portion of existing UTTR airspace that offers the potential for prioritized training time for the 388 FW. To provide the availability the 388 FW requires, the FAA and Air Force would need to amend the procedures for use of the ATCAA to allow full-time access. That done, it would fulfill Criterion 1, Criterion 2, and Criterion 3.

Criterion 4: Limit Conflicts with Civil Aviation

Definition. Under Title 49, U.S. Code and Public Law 103-272, the United States government has sovereignty over the nation's airspace from the surface to above 60,000 feet MSL. The FAA plans, manages, and controls the structure and use of this airspace to make it as useful as possible for all types of aircraft. The Air Force, in working with the FAA and listening to local civil aviation authorities, recognized that proposed airspace should limit or reduce the potential for conflicts with the structure and use of the current airspace system by civil aviation. Avoidance of conflicts with airports, jet routes, federal airways, and other airspace units represents a priority for identifying an alternative.

Application of Criterion. The preceding criteria led the Air Force to identify existing UTTR airspace—particularly the Currie/Tippet ATCAA—as the focal point for defining new airspace to support the 388 FW mission. To fulfill Criterion 4, the type of airspace and its location must also minimize conflicts with civil aviation. The military uses numerous types of airspace for testing and training. At UTTR and similar Air Force complexes, the primary airspace types consist of Restricted Areas, ATCAAs, and MOAs. Restricted airspace prohibits non-authorized users from entering the area because of hazardous military activities. Establishing a Restricted Area to support the 388 FW’s needs would, therefore, significantly limit or prevent use by civil aviation.

ATCAAs exist only when made available for military use by the FAA and can be authorized only above 18,000 feet MSL. By definition, ATCAAs can be activated only when not needed for other purposes. Furthermore, civilian and commercial traffic may transit an active ATCAA under FAA air traffic control guidance and procedures. While an ATCAA, such as the Currie/Tippet ATCAA, could create temporary limitations on the portion of civil aviation traffic operating above 18,000 feet MSL, its overall effects would be consistent with Criterion 4.

A MOA, situated below 18,000 feet MSL, comprises special use airspace designated by the FAA to identify areas where the military conducts nonhazardous operations and to separate these flight activities from nonparticipating air traffic. Nonparticipating civil and military aircraft flying under visual flight rules (VFR) may transit an active MOA by employing see-and-avoid procedures. When operating under instrument flight rules (IFR), nonparticipating aircraft must receive air traffic control clearance to enter an active MOA. Thus, while establishing a MOA could affect civil aviation traffic when active, it would not prohibit such traffic or limit it substantially. A MOA would fulfill Criterion 4, limiting conflicts with civil and commercial aviation.

As established in Chapter 1 (Section 1.2.3), the F-16s need airspace adequately sized and configured to permit training with the full spectrum of combat tactics. To provide sufficient vertical extent, both MOA and ATCAA airspace are required. Combined, a MOA and ATCAA also meet Criterion 4.

To evaluate potential locations for the airspace, the Air Force conducted preliminary research and consulted with the FAA at the regional and local levels. This effort sought to identify potential conflicts between the needed airspace and other elements of the National Airspace System. Search of the area adjacent to and surrounding UTTR for a block of potential airspace revealed potential conflicts with airports, jet routes, approach/departure paths, and other components of civil aviation north, south, and east of the UTTR (personal communication, Angus 2007).

To the north and northeast of UTTR, any new airspace would impede substantial commercial air traffic above 20,000 feet MSL (personal communication, Angus 2008). In particular, commercial air traffic from Atlanta, Dallas-Fort Worth, Houston, Denver, and Memphis to Seattle would be forced to use other

longer routings. Flights from Boston, New York, Chicago, and Minnesota to Oakland also transit these areas. On average, all these routes support about 150 flights in a 12-hour period. Areas directly east of Hill AFB and UTTR airspace pose conflicts with commercial aviation. To the south and southeast, all commercial air traffic coming from the east, southeast, and south to Salt Lake City transit the area. New airspace in the area would clearly impede this substantial air traffic.

Far less traffic occurs in the west. The western side of UTTR (Currie/Tippet ATCAA) lies in the “airspace shadow” of the existing UTTR where less civilian and commercial air traffic occur (Figure 2-1). This figure presents civil and commercial air traffic over a representative 12-hour period. This shadow results from UTTR preventing east-west/west-east traffic, and the absence of large metropolitan areas with airports. Both low and high altitude civil and commercial air traffic occur west of the UTTR. However, the density of traffic immediately west of UTTR (in the area of the Currie/Tippet ATCAA) is markedly less than elsewhere.

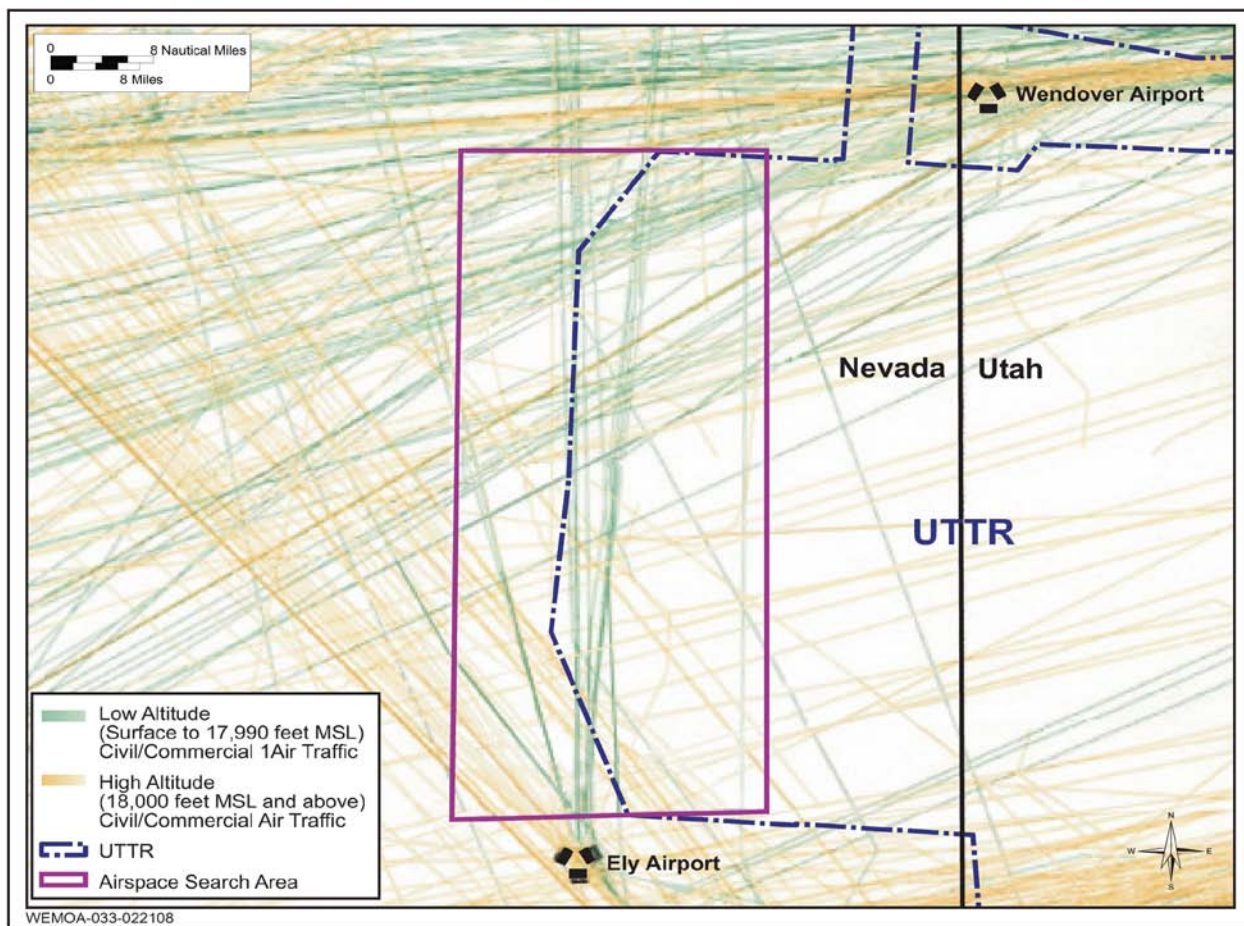


Figure 2-1 Air Traffic Flow on the West Side of UTTR

Establishment of a MOA linked to the Currie/Tippet ATCAA would fulfill the requirements of Criteria 1 through 4. Issues with civil aviation could still apply since the airspace flow map encompassing the Currie/Tippet ATCAA region indicates much greater traffic along the northwest-southeast axis generally

linking Elko and Ely, Nevada. Although, this traffic utilizes the airspace below 18,000 feet most frequently, the size and configuration of the proposed airspace (Criterion 5) would need to account for this traffic.

Criterion 5: Airspace Size and Configuration

Definition. The airspace must allow F-16 pilots to conduct a full range of tactics and maneuvers while employing almost all capabilities of the aircraft; the exceptions would include actual ordnance delivery and use of combat-mode lasers, both of which could continue to be accomplished during available time in existing UTTR restricted airspace. To meet the other defined needs, the horizontal and vertical extent of the airspace must allow for representative engagement distances with hostile threats, especially with regard to current state-of-the-art targeting and identification technology. Any candidate airspace must have the size and configuration to support up to three, four-ship engagements on simultaneous aerial combat training missions; permit long range, high speed dissimilar aircraft combat; and allow the F-16s to operate at a broad range of altitudes consistent with combat tactics (refer to Criterion 4). As such, the airspace needs to offer horizontal dimensions of at least 30 by 60 nm, and a vertical span from roughly 14,000 feet MSL to above 40,000 feet MSL. Based on the needs and requirements for training, as well as the other training assets of UTTR, the Air Force recognized that new MOA airspace, when linked to an existing ATCAA, could meet the training needs of the 388 FW. Establishing a restricted area would exceed the nature of the training requirements and unnecessarily constrain civil and commercial aviation.

Application of Criterion. As defined previously, any alternative must provide airspace that offers sufficient horizontal and vertical size to permit the full range of F-16 maneuvers and allow for multi-ship operations. Horizontal dimensions of at least 30 by 60 nm are required to support air combat engagements, CAS, dissimilar aircraft tactics, two- and four-ship engagements and other operations. At a length of 60 nm and a width of 30 nm, the airspace could be divided into three equal sections for simultaneous independent training activities. The 60 nm length also supports multi-ship tactical intercepts and air combat training oriented along the long axis. When attached to existing UTTR airspace, a 30 by 60 nm unit would also provide marshalling and maneuvering area for ingress to and egress from UTTR.

The vertical dimensions of the airspace must, in order to provide sufficient volume, start from a floor low enough to ensure realism. Based on the 388 FW training regime, the F-16s can operate down to 500 feet AGL. However, through public input, the Air Force and FAA recognized that establishing new airspace at such low altitude could affect civil aviation traffic. Furthermore, for the F-16s, training at altitudes below 5,000 feet AGL comprises only 20 percent of their required activity (Air Force 2006). These factors combined led the Air Force to define an acceptable floor altitude of 14,000 MSL. The ceiling, or upper limit of the airspace, must extend to 40,000 feet MSL or higher to accommodate the full range of

combat training activities conducted by the F-16s. Out of their total activities, the F-16s commonly fly above 24,000 feet MSL almost 50 percent of the time (Air Force 2006b).

The Currie/Tippet ATCAA, which meets the first four criteria, largely fulfills the requirements of airspace size and volume defined by Criterion 5. This existing airspace measures 30 nm (west-east) by 70 nm (north-south), exceeding the dimensions needed by the 388 FW. With a ceiling of 58,000 feet MSL, the Currie/Tippet ATCAA would provide a sufficient upper altitude for the F-16 training. However, the lower limits of the ATCAA (18,000 feet MSL) would not extend low enough to offer the necessary floor altitude of 14,000 feet MSL.

To fulfill this criterion, the Air Force would need to add airspace to the base of the Currie/Tippet ATCAA. As demonstrated previously, a MOA extending from 14,000 to 18,000 feet MSL underlying and linked to the Currie/Tippet ATCAA would meet the airspace needs. The configuration of the airspace needs to reflect both operational requirements and avoidance of conflicts with civil aviation. Establishing a MOA that matched the horizontal configuration of the ATCAA would ensure adequate horizontal size for the F-16 training. Initially, the Air Force proposed that the MOA horizontal boundaries mirror the ATCAA boundaries, but consultation with the FAA and input from the region's civil and commercial aviation managers indicated the potential for conflicts and impacts in the southern portion of the area. For this reason (as detailed under Criterion 4), the Air Force truncated the southern portion of the initial MOA.

Criterion 6: Supersonic Flight and Deployment of Chaff and Flares

Definition. The F-16, as a multi-role fighter, offers a variety of capabilities to fulfill its breadth of missions and tactics. To meet training requirements and maintain combat-ready status, F-16 pilots need to employ the full capabilities of the aircraft. In particular, the F-16 must employ supersonic flight in both attack and escape scenarios, and must use defensive countermeasures consisting of chaff and flares. While both of these activities are authorized in other portions of UTTR airspace, these airspace units suffer availability limitations detailed previously. The proposed action, therefore, includes use of chaff and flares throughout the new and linked airspace in accordance with Air Force and ACC standards. Similarly, the proposal would authorize supersonic flight above 18,000 feet MSL. Certain capabilities, such as actual ordnance delivery, would not occur under the proposed action or any alternative. Sufficient time in other portions of UTTR that allow these activities would remain available.

Application of Criterion. Through the application of the first four criteria, the Air Force identified a proposal to establish the White Elk MOA under the existing Currie/Tippet ATCAA. To fulfill Criterion 6, the Air Force would need to seek authorization for the use of chaff and flares throughout the new and existing airspace in accordance with Air Force and ACC standards. Similarly, the proposal

needs to authorize supersonic flight above 18,000 feet MSL in the Currie/Tippet ATCAA. Neither of these training requirements can be met through the use of simulators as described in Section 2.1.2.

2.1.2 Alternatives Considered But Not Carried Forward

Application of the alternative identification methodology resulted in the elimination of all existing airspace except UTTR. Additional potential alternatives, including concepts raised during scoping, were evaluated but either did not meet the fundamental purpose and need for the training airspace or were not reasonable alternatives. The following describes why each of these concepts was not carried forward for detailed analysis in this EIS.

Use of Simulators

Use of flight simulators represents another option to provide the training sought in implementing the proposed action. Simulators have improved over the years and represent a valuable training aid. To the maximum extent possible, F-16 pilots receive training on sophisticated simulators. Pilots receive basic procedural and emergency procedural training using simulators, but only these types of training can be achieved. While sophisticated, simulators cannot provide the necessary mental or physiological realism to achieve combat readiness. Combined, these and other factors, limit the value of simulators as a replacement for actual flight training:

- Simulators permit training with only one aircraft whereas most actual combat involves multiple aircraft working in a coordinated fashion; only actual operations in airspace supports such multi-ship training and coordination. Simulators cannot replicate a dynamic situation in which time awareness and spatial orientation are required amidst the confusion of a tactical air engagement.
- Many essential types of training missions cannot be performed on simulators. For example, F-16's assigned to Hill AFB are equipped with a Sniper Pod. The Sniper Pod is used for target identification, tracking, coordinate generation, and precise weapons guidance. Pilots must employ this capability even when not actually releasing weapons. Simulators do not offer Sniper Pod capability for pilots to learn the function and effective employment of the system.
- While simulators provide a switch action that can simulate deployment of chaff and flares, it cannot provide feedback on the effectiveness of deployment. Such feedback on chaff and flare deployment can only be provided by the reactions of opposing aircraft. The radar replay from these actual opposing aircraft offer the only means to evaluate the pilot's use of chaff and flares.
- Supersonic flight during basic flight maneuvers and high-speed "dogfights" requires the pilot to resist the physical effects of inertia and "G" forces (the force of gravity) which cannot be duplicated in a stationary simulator.
- Simulators cannot replicate the teamwork associated with flying. Using simulators also excludes other parts of the Air Force team essential in completing actual missions, including maintenance, supply, and weather analysis.

For the reasons described above, an hour of simulator training is not equivalent to an hour of actual training, so simulator use cannot be “swapped” for flight hours. Simulator training can meet about five percent of pilot RAP training requirements; the remainder must be met through live flying. The dynamics of training for multi-ship tactics, working with and against friendly and enemy forces with 4, 8, 12 or more aircraft in the sky at the same time simply cannot be accomplished by any means except actual flying. Where timing is critical and aircraft “G” forces can affect a pilot’s ability to think and act, where aircraft speed and the actual movement (up/down/left/right/acceleration/deceleration) of the aircraft in space are critical components to the training, it is simply impossible for a simulator to mimic this process or any of the factors that combine to provide the whole training situation. Increased use of simulators could not replicate hours of actual flight required to ensure aircrew readiness under RAP or any other training regime. Therefore, use of simulators to offset RAP training hours under this White Elk MOA proposal represents an alternative considered but not carried forward for further analysis.

Other Locations for New Airspace

Early in the process of defining an appropriate airspace proposal to support the 388 FW, Hill AFB considered developing new airspace in the proximity of the base. This airspace needed to meet all the criteria described previously, except it would consist of a newly established MOA/ATCAA combination; no existing airspace would be incorporated. In this initial effort, before consulting with the FAA, Hill AFB looked at an area north-northeast of the base within 150 nm (Figure 2-2). Aircrews suggested this area north-northeast of the base because flight activity would flow away from the majority of base air traffic headed to UTTR. As such, the 388 FW’s operations would be separate from and independent of the rest of operations at UTTR, ensuring scheduling priority and consistent access.

Hill AFB considered two locations, Location 1 and Location 3, as potential candidates for the airspace. Situated over the southwest corner of Wyoming, Location 1 formed a rectangle of sufficient size to support the needed 388 FW training. Similarly sized and capable of providing for the F-16 training needs, Location 3 straddled the Idaho-Wyoming border in the southeast corner of Idaho. Hill AFB then consulted with the FAA, who would ultimately approve or deny the establishment of any airspace. The FAA reviewed both Location 1 and 3 relative to civil and commercial air traffic. Since the FAA is charged with ensuring the beneficial use of the National Airspace System for all users, it evaluated these potential airspace locations for their effects on use and management of the airspace. As a result of this review, the FAA indicated strong disapproval of both potential locations due to conflict with commercial air traffic above 20,000 feet MSL. Location 1 would impede more than 20 commercial flights per hour, especially those from the east and south to Seattle. Given the air traffic in nearby sectors, the FAA determined it could not mitigate these effects by re-routing or scheduling should the Air Force establish a MOA/ATCAA in Location 1. Similarly, Location 3 would conflict with hundreds of daily cross-country commercial flights (e.g., Atlanta-Seattle; Chicago/New York-Oakland). The FAA could not define any means to mitigate these conflicts. With these problems, and without FAA support, neither location would

be technically feasible as an alternative. These locations were not considered reasonable alternatives and neither was carried forward for further analysis.

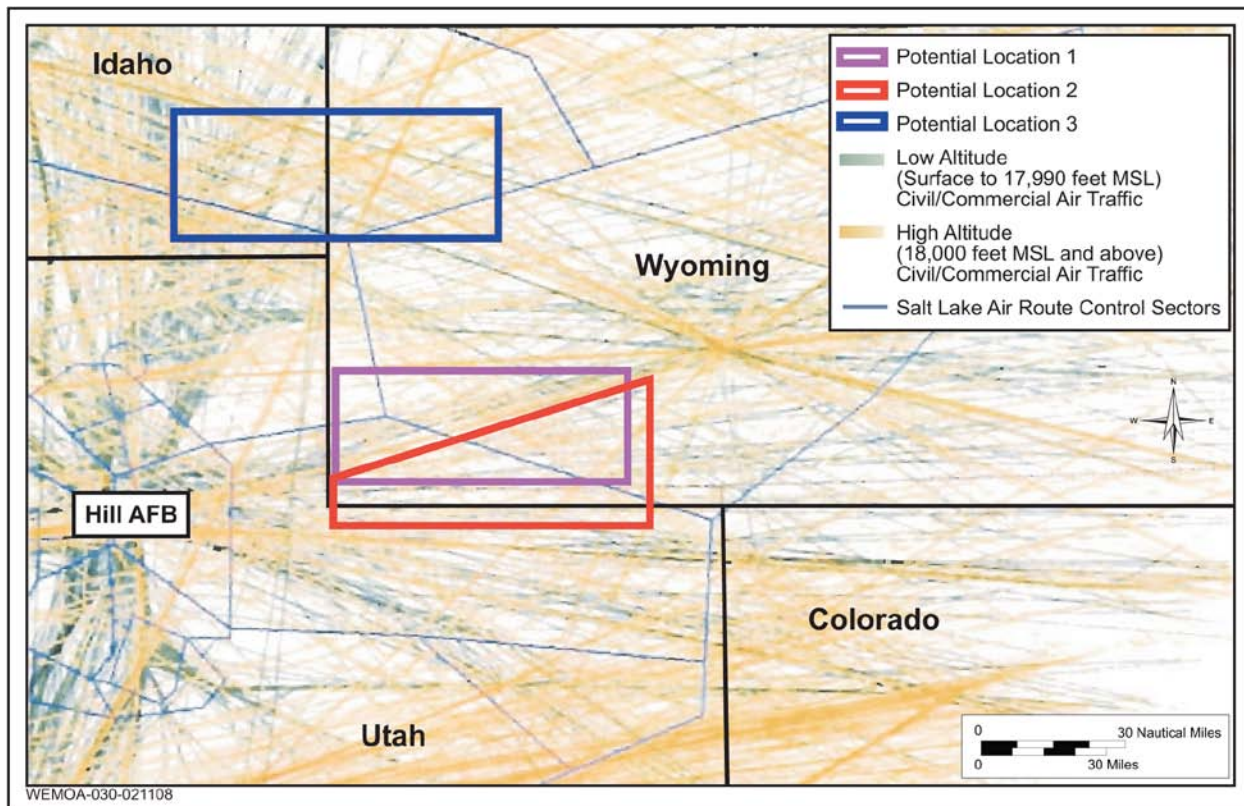


Figure 2-2 Air Traffic Flow in Potential Airspace Locations

After this review, the FAA offered a possible compromise, Location 2. Although mostly overlapping Location 1, this location failed to fulfill the operational requirements for the 388 FW. First, by reducing its size and angling its northern boundary, Location 2 would inhibit the ability of the F-16s to conduct multi-ship training and the full spectrum of combat tactics. Second, the FAA placed altitude limitations on the airspace to reduce conflicts with commercial aviation. By limiting the altitude span from 18,000 feet MSL to 28,000 feet MSL, Location 2 would not offer sufficient airspace to conduct most air-to-air training (personal communication Angus 2008). To provide realistic encounters, pilots must “attack” each other from markedly different altitudes and have sufficient space to conduct engagements. Since Location 2 failed to support the training needs, it could not be considered a viable and reasonable alternative for further analysis.

2.1.3 Alternatives Analyzed in this EIS

Application of the alternative identification methodology defined the proposed White Elk MOA. No other airspace or location within or near UTTR met the criteria and fulfilled the training requirements.

This EIS analyzes the proposed White Elk MOA in addition to the no-action alternative. The no-action alternative reflects the status quo, without establishment of the White Elk MOA or its associated actions.

2.2 PROPOSED ACTION

The proposed action and the Air Forces' preferred alternative would establish additional airspace linked to the existing UTTR to provide the 388 FW with reliable and consistent training opportunities and the capacity to achieve combat-ready status for all F-16 pilots. This proposal would increase the opportunity for daily, consistent training by these pilots, avoiding the scheduling limitations of the rest of UTTR. Establishment of the White Elk MOA would permit the 388 FW to train using the full capabilities of tactics and maneuvers needed to survive and succeed in combat. The proposed action consists of four basic components:

- Establishment of new airspace, the White Elk MOA;
- Performance of training operations in the new White Elk MOA and existing, overlying Currie/Tippet ATCAA;
- Authorization for supersonic operations in the existing Currie/Tippet ATCAA above 18,000 feet MSL (approximately 7,100 to 12,000 feet above ground level [AGL]); and
- Use of chaff and flares in the new MOA and existing ATCAA airspace.

2.2.1 Establishment of the White Elk MOA

The proposed action would establish a MOA in northeastern Nevada over portions of White Pine and Elko Counties for use by the 388 FW and other Air Force and Navy (i.e., F-18) aircraft. This MOA would underlie and generally align with the Currie/Tippet ATCAA (Figure 2-3) so the two airspace units could be scheduled and used together. Horizontally, the boundaries would match those of the overlying ATCAA on the north, east, and most of the west. To eliminate conflicts with civil aviation in Ely, Nevada, the Air Force would truncate the western edge of the MOA by about 15 nm and extend the MOA's southern boundary southeast to match the corner of the ATCAA. In terms of areal coverage, the White Elk MOA would overlay 1,674 square nm as compared to 1,993 square nm for the Currie/Tippet ATCAA. Establishment of the MOA would not result in the horizontal expansion of the existing UTTR; no new lands would underlie the White Elk MOA.

Hill AFB, through a Letter of Agreement with the FAA Salt Lake City Air Route Traffic Control Center (SLC ARTCC 2007), subdivided the existing Currie/Tippet ATCAA into four units: Currie High, Currie Low, Tippet High, and Tippet Low (Table 2-1). Activating individual ATCAA units or combinations of units occurs and would continue in response to operational needs and FAA requirements for the airspace.

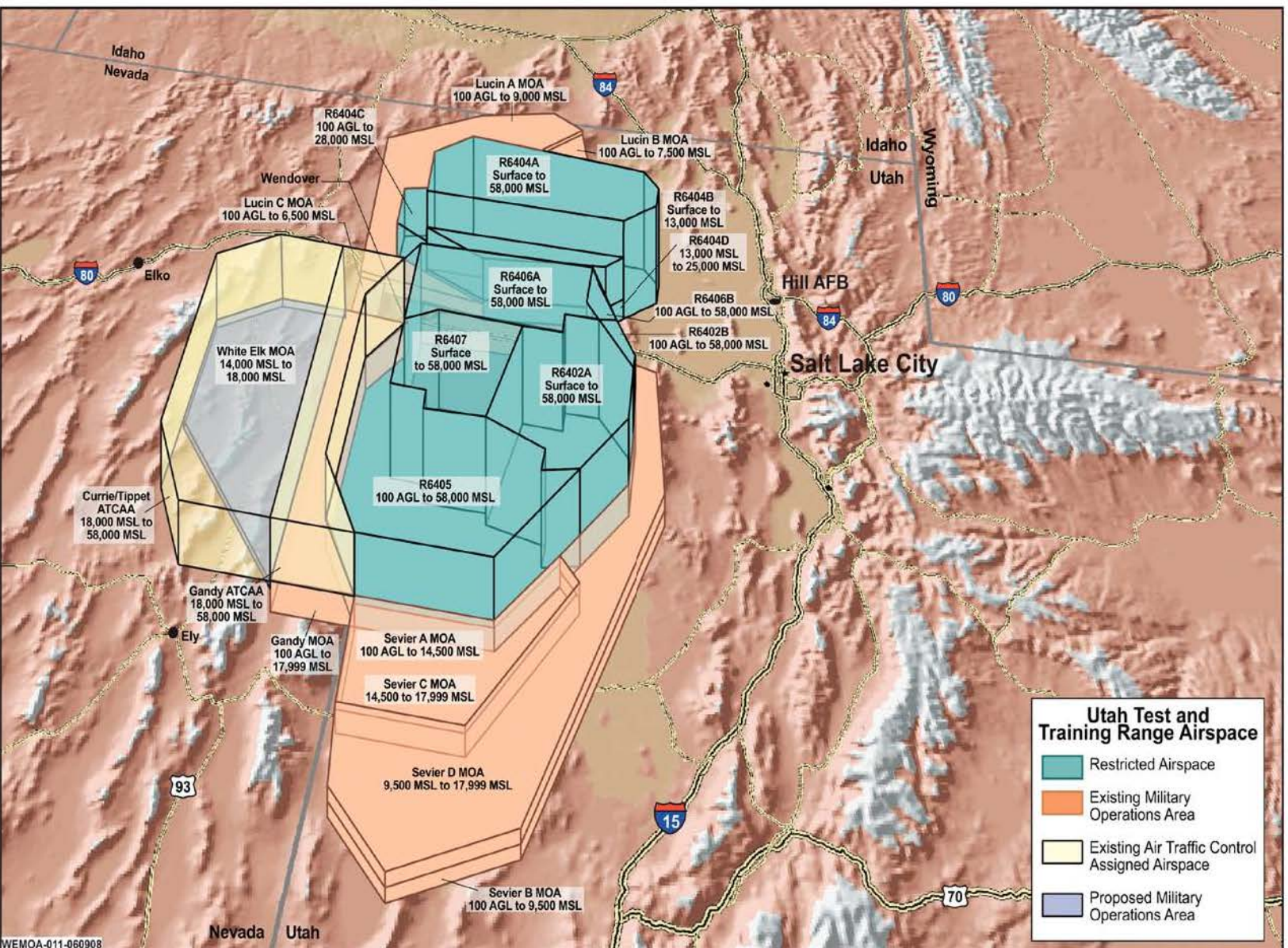


Figure 2-3 Proposed White Elk MOA and Existing UTTR Airspace

For the purposes of this EIS, the Currie/Tippet ATCAA will be discussed as a single unit, since that conforms to the common conditions. Under the proposed action, Hill AFB may temporarily subdivide the White Elk MOA to accommodate two or more simultaneous, but independent training operations. No formal boundaries would be defined; rather, they would change depending upon the number of aircraft involved and the type of mission.

Table 2-1 Structure and Altitude: Proposed White Elk MOA and Currie/Tippet ATCAA		
<i>Airspace Unit</i>	<i>Floor (lower) Altitude</i>	<i>Ceiling (upper) Altitude</i>
Proposed White Elk MOA	14,000 feet MSL	18,000 feet MSL
Existing Currie ATCAA low	18,000 feet MSL	28,000 feet MSL
Existing Currie ATCAA high	29,000 feet MSL	58,000 feet MSL
Existing Tippet ATCAA low	18,000 feet MSL	28,000 feet MSL
Existing Tippet ATCAA high	29,000 feet MSL	58,000 feet MSL

Note: Division within the ATCAA are used for scheduling only.

The proposed White Elk MOA would extend from 14,000 feet MSL to 18,000 feet MSL and directly underlie the Currie/Tippet ATCAA, with the exception of the southwest corner. With a ceiling of 58,000 feet MSL, the ATCAA, when combined with the new MOA, would provide extensive maneuvering room capable of supporting the combat tactics of the F-16s and other aircraft. Since the underlying terrain varies from flat basins to mountain peaks, the altitude of the floor of the proposed White Elk MOA above the ground varies commensurately. As indicated in Table 2-2, the proposed MOA overlies representative locations by approximately 3,100 to 8,500 feet. Alone, the White Elk MOA would increase the total volume of UTTR airspace by roughly 1.4 percent. When combined, the White Elk MOA and Currie/Tippet ATCAA would account for about 18 percent of the total volume of airspace encompassed by the UTTR. As such, the White Elk MOA would add minimally to the total UTTR airspace.

Table 2-2 Representative Elevations for Locations Under the Currie/Tippet ATCAA and/or Proposed White Elk MOA				
<i>Under ATCAA/MOA</i>	<i>Location</i>	<i>Ground Elevation (feet MSL)</i>	<i>Altitude of ATCAA Floor above ground (AGL)</i>	<i>Altitude of Proposed MOA Floor above ground (AGL)</i>
ATCAA	Bassett Lake	6,042	11,958	7,958
ATCAA	Currie	5,801	12,199	8,199
ATCAA	Steptoe	5,988	12,012	8,012
ATCAA	McGill	6,250	11,750	7,750
ATCAA&MOA	Becky Peak	9,993	8,007	4,007
ATCAA&MOA	Cherry Creek	6,131	11,869	7,869
ATCAA&MOA	Goshute Canyon Wilderness	7,874	10,126	6,126
ATCAA&MOA	Goshute Canyon WSA ^{1,2}	7,054	10,946	6,946
ATCAA&MOA	Lages Station	5,971	12,029	8,029
ATCAA&MOA	Stone House	6,280	11,720	7,720
ATCAA&MOA	Low Point	5,555	12,445	8,445
ATCAA&MOA	High Point	10,950	7,050	3,050

Notes: ¹ WSA = Wilderness Study Area.

² Formerly part of Goshute Canyon Wilderness prior to White Pine County Conservation, Recreation, and Development Act of 2006.

In order to use the Currie/Tippet ATCAA in the manner necessary to support F-16 training requirements, the Air Force would work with the FAA to extend use of the ATCAA airspace for more than 8 weeks each calendar year.

2.2.2 Training Operations in the Proposed White Elk MOA and Existing Currie/Tippet ATCAA

Sortie-Operations

Under the proposed action, the primary users of the White Elk MOA and Currie/Tippet ATCAA would be the F-16s from the 388 FW. In total, the 388 FW would conduct 9,200 sortie-operations annually in the combined MOA/ATCAA airspace (Table 2-3). Other transient (not based at Hill AFB) aircraft would use the combined airspace, including F-15s, F-22s, A-10s, and F-16s. These transients would conduct 390 sortie-operations in addition to the 388 FW. The Air Force anticipates that the 388 FW would schedule the MOA and ATCAA together so each sortie-operation would use both airspace units. While temporary subdivisions could be designated to accommodate simultaneous, but independent activities, these would neither add to the number of total sortie-operations nor increase use of one portion of the airspace above another. Total annual use of the ATCAA airspace would increase substantially (571 percent) over baseline 2007 usage. Sortie-operations in the remainder of UTTR and sorties out of Hill AFB would remain unchanged.

Table 2-3 Baseline and Proposed Sortie-Operations: Combined White Elk MOA and Currie/Tippet ATCAA			
<i>Aircraft</i>	<i>Baseline*</i>	<i>Proposed</i>	<i>Increase</i>
388 FW F-16	451	9,200	8,749
Transient	97	390	293
Total	548	9,590	9,042

Note: *Baseline consists of Currie/Tippet ATCAA only; 2007 data.

Due to potential overflow from the remainder of UTTR and other training complexes, the Air Force anticipates a few transient aircraft would use the White Elk MOA and Currie/Tippet ATCAA. Although many different aircraft types may seek to conduct training in the airspace (Table 2-4), the primary transients would likely include F-15s, F-22s, A-10, and F-16s from other bases. Transients would account for about 4.1 percent of total activity in the airspace. Currently, the transients conduct 97 sortie-operations in the existing Currie-Tippet ATCAA, accounting for 17.7 percent of total use.

Table 2-4 Transient Aircraft with the Potential to Operate in White Elk MOA and Currie/Tippet ATCAA	
<i>Aircraft Type</i>	<i>Description</i>
A-10 and OA-10 Thunderbolt II	Low altitude, heavily protected aircraft designed to defeat armored vehicles and act as forward air controller
B-1B Lancer	Long range, high and low altitude bomber performing deep interdiction strikes
B-2 Spirit	Long range, high and low altitude bomber performing deep interdiction strikes with stealth technology
B-52H Stratofortress	Long range, high and low altitude bomber performing deep interdiction strikes
C-5	Long range, strategic airlift and cargo transport
C-17A Globemaster	Long range, heavy lift cargo transport
C-130 Hercules	Four-engine turboprop troop and cargo transport
F-15C Eagle	Performs air-to-air combat and air intercept operations; no surface attack missions
F-15E Strike Eagle	Air-to-ground fighter with air-to-air capability
F-16C/D Fighting Falcon	Multi-role fighter performing close air support, air-to-air combat, interdiction strikes, and suppression of enemy air defenses
F/A-18C/D Hornet	U.S. Navy, Marine Corps, and Canadian Air Force twin-engine, multi-mission tactical air-to-air and air-to-ground fighter aircraft
F-22A Raptor	Air-to-air combat and intercept missions and air-to-ground missions with stealth technology
KC-135E, KC-10A	High-altitude aerial refueling aircraft to support varied aircraft missions
RC-135 Rivet Joint	Surveillance aircraft equipped with sophisticated intelligence gathering devices for monitoring enemy electronic activity

The 388 FW normally conducts operations about 260 days per year; fuel allocations, weather, and crew rest account for the remaining 104 days. Operations predominantly occur during the weekdays, although weekend activities could occur. On average, the 388 FW and transients would perform approximately 37 sortie-operations per flying day in the MOA and ATCAA. The Currie/Tippet ATCAA currently supports about 2 sortie-operations per flying day.

Hill AFB recognizes that glider enthusiasts enjoy flying in the excellent conditions in eastern Nevada. “Glider Week,” which commonly occurs in the first week of July attracts dozens of gliders to Ely, Nevada, about 15 miles south of the Currie/Tippet ATCAA. Commonly, the airspace manager from Hill AFB offers to brief the Glider community on procedures in and around Ely. The airspace manager calls the Ely airport manager every year in May to verify the status of the annual event. Should the Air Force and FAA implement the proposed White Elk MOA, Hill AFB would also:

- Plan not to schedule the MOA during “Glider Week;” and
- Post a Notice to Airman to inform military pilots of the glider event.

Operational Parameters

The operational parameters of interest for this proposal include day versus night operations, speed, duration, altitude profile, and missions. Table 2-5 presents these parameters for baseline and proposed sortie-operations. The following briefly discusses each parameter.

Table 2-5 Operational Parameters for Baseline and Proposed Sortie-Operations								
Aircraft Type	Baseline/ Proposed	Annual Sorties-Operations	Day/Night Split		Typical Air Speed (MACH)	Average Duration (Min)	Percent Total Time	
			0700-2200	2200-0700			MOA	ATCAA
388 FW								
F-16	Baseline	451	428	23	.96	25	0%	100%
F-16	Proposed	9,200	8,740	460	.96	20-30	15%	85%
Transients								
Other Aircraft ¹	Baseline	97	93	4	.96	25	0%	100%
F-15	Proposed	40	40	0	.96	25	15%	85%
F-22	Proposed	60	60	0	.96	25	5%	95%
A-10	Proposed	90	90	0	.88	25	100%	0%
Other Aircraft ¹	Proposed	200	200	0	.96	25	15%	85%

Note: ¹Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s.

Day and Night Operations

Pilots need to train under all weather and visibility conditions, including darkness at night. Use of night vision goggles and other technology support nighttime operations so pilots must practice to employ these capabilities in combat. For the purposes of training, night operations consist of those performed any time after sunset. However, due to penalties assigned to noise levels, environmental night extends from 2200 (10:00 pm) to 0700 (7:00 am). All “night” operations described herein are environmental night.

Under the proposed action, the percentage of environmental night sortie-operations would remain at 5 percent for the F-16s, the same as baseline. No transient operations would occur during environmental night. Total environmental night operations would increase by 437 annually, or about 1.7 per flying day.

Airspeed

Airspeed varies with the aircraft type, mission, tactics, and maneuvers. The airspeeds presented in Table 2-5, defined as a proportion of Mach, reflect averages for the range of sortie-operations conducted by the different aircraft. Mach is the measure of an aircraft's speed relative to the speed of sound at a given altitude (Mach 1). At sea level, Mach 1 equals 761 miles per hour. In the area affected by the proposed action, Mach 1 is roughly 745 to 750 miles per hour at the surface. Most aircraft, especially the F-16s, normally operate at subsonic speeds. As discussed below, F-16s would conduct supersonic (above Mach 1) operations above 18,000 feet MSL for specific missions to meet combat readiness requirements.

Duration

Duration refers to the average amount of time spent in the airspace conducting training. For the proposed action, the F-16s would normally fly in the MOA and ATCAA for 20 to 30 minutes depending upon the mission. Sortie-operations by transient aircraft would last 25 minutes, on average. To extend training opportunities on a proportion of sorties, the F-16s and some transients would employ aerial refueling. The 388 FW gets access to two or three tankers per week, at present. Currently, 15 percent of F-16 sortie-operations in the ATCAA receive refueling to extend the duration of training; approximately 2.8 percent of the transients also refuel. While these percentages would likely continue under the proposed action, the total number of refueling events would increase proportionately to the increase in sortie operations. With refueling, the durations of sortie-operations would range from 50 to 60 minutes depending upon the training mission. However, the operations in Iraq and Afghanistan, along with an aging tanker fleet, may reduce the amount of refueling opportunities and sortie operations.

Altitude Distribution

Table 2-6 presents the altitude profiles under baseline conditions and profiles for the proposed action. Under baseline conditions, the prime users (F-16s from 388 FW) operate 82.4 percent of the time between 18,000 and 29,000 feet MSL. This use pattern would decrease only slightly to 70 percent under the proposed action.

Different missions for the F-16s would employ different altitude profiles within the White Elk MOA and Currie/Tippet ATCAA. Within the MOA, use would be evenly distributed among the altitude blocks; in the ATCAA, the 18,000 to 29,000 feet MSL blocks would receive the greatest use except for transient A-10s and F-22s. As close air support aircraft, the A-10s would fly within the MOA exclusively because of their missions and capabilities. F-22s fly at higher altitude regimes than other fighter aircraft, spending approximately 54 percent of a sortie-operation above 30,000 feet MSL.

Table 2-6 Altitude Profiles: Baseline and Proposed									
BASELINE									
Aircraft					Currie/Tippet ATCAA Altitude Bands (thousand feet MSL)				
					18-24	24-29	29-34	34-39	39-45
F-16					41%	41%	8%	8%	2%
F-15 Transient					33%	37%	17%	11%	2%
F-22 Transient					14%	30%	28%	20%	8%
Other Transient					49%	34%	7%	7%	2%
PROPOSED									
Aircraft/ Mission	White Elk MOA Altitude Bands (thousand feet MSL)				Currie/Tippet ATCAA Altitude Bands (thousand feet MSL)				
	14-15	15-16	16-17	17-18	18-24	24-29	29-34	34-39	39-45
F-16									
TI	3.75%	3.75%	3.75%	3.75%	35%	35%	6.5%	6.5%	2%
CAS	7.50%	7.50%	7.50%	7.50%	70%	0%	0%	0%	0%
DCA/OCA	3.75%	3.75%	3.75%	3.75%	35%	35%	6.5%	6.5%	2%
SAT	3.75%	3.75%	3.75%	3.75%	35%	35%	6.5%	6.5%	2%
Transient Aircraft									
F-15	3.75%	3.75%	3.75%	3.75%	30%	34%	12.8%	6.8%	2%
F-22	1.25%	1.25%	1.25%	1.25%	13%	29%	26.6%	19%	8%
A-10 ¹	34%	33%	33%	0%	0%	0%	0%	0%	0%
Other ²	3.75%	3.75%	3.75%	3.75%	42%	29%	6%	6%	2%

Notes: ¹A-10 aircraft would not use the ATCAA, so not included in baseline activities.

²Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s.

Missions

Establishment of the White Elk MOA and other elements of the proposed action would create a context to expand the types of missions conducted in the airspace. In the existing Currie/Tippet ATCAA, the F-16s and transient aircraft are limited to air-to-air tactical intercept missions. All sortie-operations follow a similar pattern. Under the proposed action, expanded missions would include TI, CAS, DCA/OCA, and SAT. Table 2-7 presents the number of sortie-operations associated with each mission type; refer to Table 2-6 for altitude profiles for the missions.

Table 2-7 F-16 Missions and Refueling Events					
<i>F-16 Mission</i>	<i>Refueling</i>	<i>Sortie-Operations</i>			<i>Duration</i>
		<i>Day (0700-2200)</i>	<i>Night (2200-0700)</i>	<i>Total</i>	<i>Minutes</i>
TI	No	1,486	78	1,564	20
	Yes	262	14	276	55
CAS	No	1,486	78	1,564	30
	Yes	262	14	276	60
DCA/OCA	No	1,486	78	1,564	20
	Yes	262	14	276	50
SAT	No	2,972	156	3,128	20
	Yes	524	28	552	50
Total		8,740	460	9,200	

For the 390 transient sortie-operations, their missions would fall within the range of activities performed by the F-16s. Some transient aircraft (e.g., F-15C) would emphasize air-to-air missions such as TI and DCA/OCA. Conversely, the A-10s would focus on CAS and SAT missions. Refueling for both F-16s and transients would permit the extended training opportunities.

Aerial Refueling in the ATCAA

Aerial refueling serves two purposes: training and extending the duration of missions. In combat, refueling comprises an essential skill since aircraft often refuel before and after an attack. The intricacies and timing required to successfully connect a tanker and fighter aircraft while flying hundreds of miles per hour must be practiced and perfected.

In addition, refueling allows pilots to extend training missions for a longer duration and accomplish more training in a single sortie. While the distance to the existing Currie/Tippet ATCAA and the proposed White Elk MOA falls well within the range of an F-16, opportunities to refuel would enhance training. Aerial refueling currently occurs on a refueling track (AR-659) located within the Currie/Tippet ATCAA (Figure 2-4). Situated between 19,000 and 24,000 feet MSL, AR-659 currently provides refueling for 86 aircraft annually – mostly the F-16s from the 388 FW. The number of refueling events would increase in relation to sortie-operations proposed in the White Elk MOA and existing ATCAA.

As indicated in Table 2-7 above, the F-16s would refuel on 1,380 sortie-operations (15 percent) with implementation of the proposed action. Only 11 of the 390 proposed sortie-operations (2.2 percent) by transients would involve refueling. Tanker aircraft, KC-135s and KC-10s, would continue to provide refueling services. These tankers would fly orbits along AR-659 for two hour periods for a total of 6 hours per flying day. Refueling would add about 780 operations in the ATCAA.

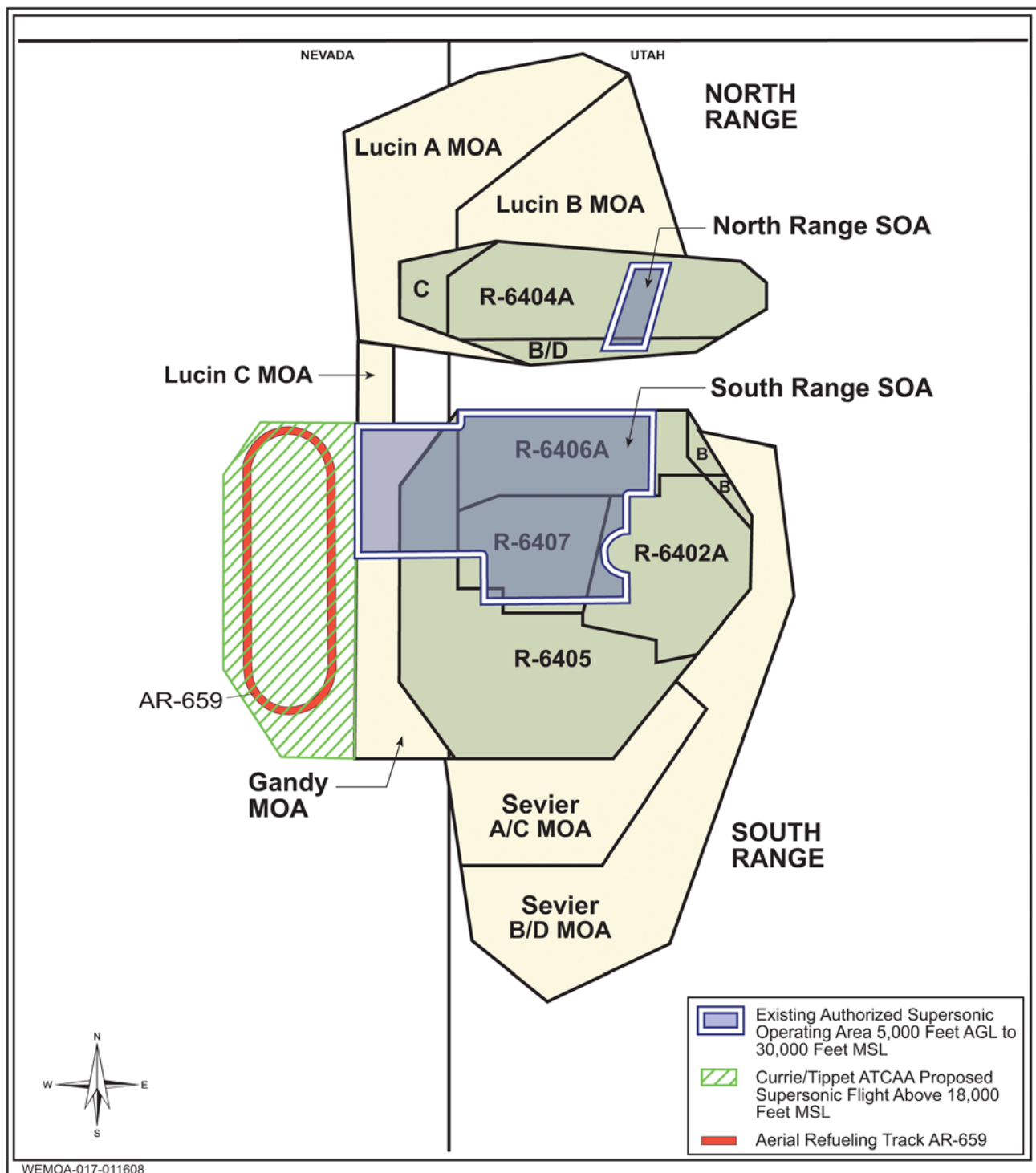


Figure 2-4 Air Refueling Track AR-659 and Supersonic Operating Areas

Source: Hill AFB 1999

2.2.3 Authorization of Supersonic Flight in the Currie/Tippet ATCAA

To train with the full capabilities of the aircraft, the F-16 would employ supersonic flight. UTTR contains two supersonic operating areas (refer to Figure 2-4) but these suffer from the same limitations of access as the remainder of the complex. Under the proposed action, supersonic operations would be authorized for all capable aircraft in the Currie/Tippet ATCAA above 18,000 feet MSL. The amount and nature of supersonic activity would correlate to specific aircraft types and missions, as presented in Table 2-8 below. Not all F-16 missions would involve supersonic flight; CAS would not require it. Similarly, not all transient aircraft would employ supersonic flight.

Table 2-8 Proposed Supersonic Events in Currie/Tippet ATCAA					
<i>Aircraft/ Mission Type</i>	<i>Number of Missions</i>	<i>Percent Supersonic</i>	<i>Annual Supersonic Sorties¹</i>	<i>Maximum Supersonic Events per sortie²</i>	<i>Total Annual Supersonic Events³</i>
F-16					
TI	1,840	20%	368	3	1,104
CAS	1,840	0%	0	NA	NA
DCA/OCA	1,840	20%	368	3	1,104
SAT	3,680	20%	736	1	736
Subtotal	9,200	NA	1,472	NA	2,944
Transient Aircraft					
F-15	40	9%	3	1	3
F-22	60	30%	18	8	144
A-10	50	0%	0	NA	NA
Other ⁴	200	20%	40	2	80
Subtotal	390	20%	61	NA	227
Total	9,590	NA	1,543	NA	3,171

Notes: ¹Annual Supersonic Sorties are the number of sorties where mission requirements dictate the need for supersonic flight.

²The supersonic events per sorties are dependent on the operation type; i.e. DCA/OCA involves 3 supersonic engagements per sortie. Numbers of events are based on maximum supersonic engagements per sortie and do not directly correlate to numbers of sonic booms.

³Total annual supersonic events are the total number of times discrete supersonic activities that would occur annually.

⁴Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s.

Supersonic flight would occur throughout the ATCAA for those missions requiring its use. Based on the operational parameters for proposed flight activities, the Air Force would conduct approximately 75 percent of this activity above 30,000 feet MSL. Generally, supersonic events above 30,000 feet MSL have the least probability of generating sonic booms that could reach the ground.

For the F-16s, the 388 FW estimates a maximum of three separate supersonic segments would occur during a sortie-operation involving supersonic flight. To achieve this maximum would require refueling; all other supersonic sortie-operations would involve a single segment. Under the maximum scenario, the segments would follow a basic script as described below and depicted in Figure 2-5:

- supersonic inbound to engagement,
- subsonic engagement,

- supersonic disengagement,
- regroup,
- supersonic inbound to engagement,
- subsonic engagement, and
- subsonic disengagement.

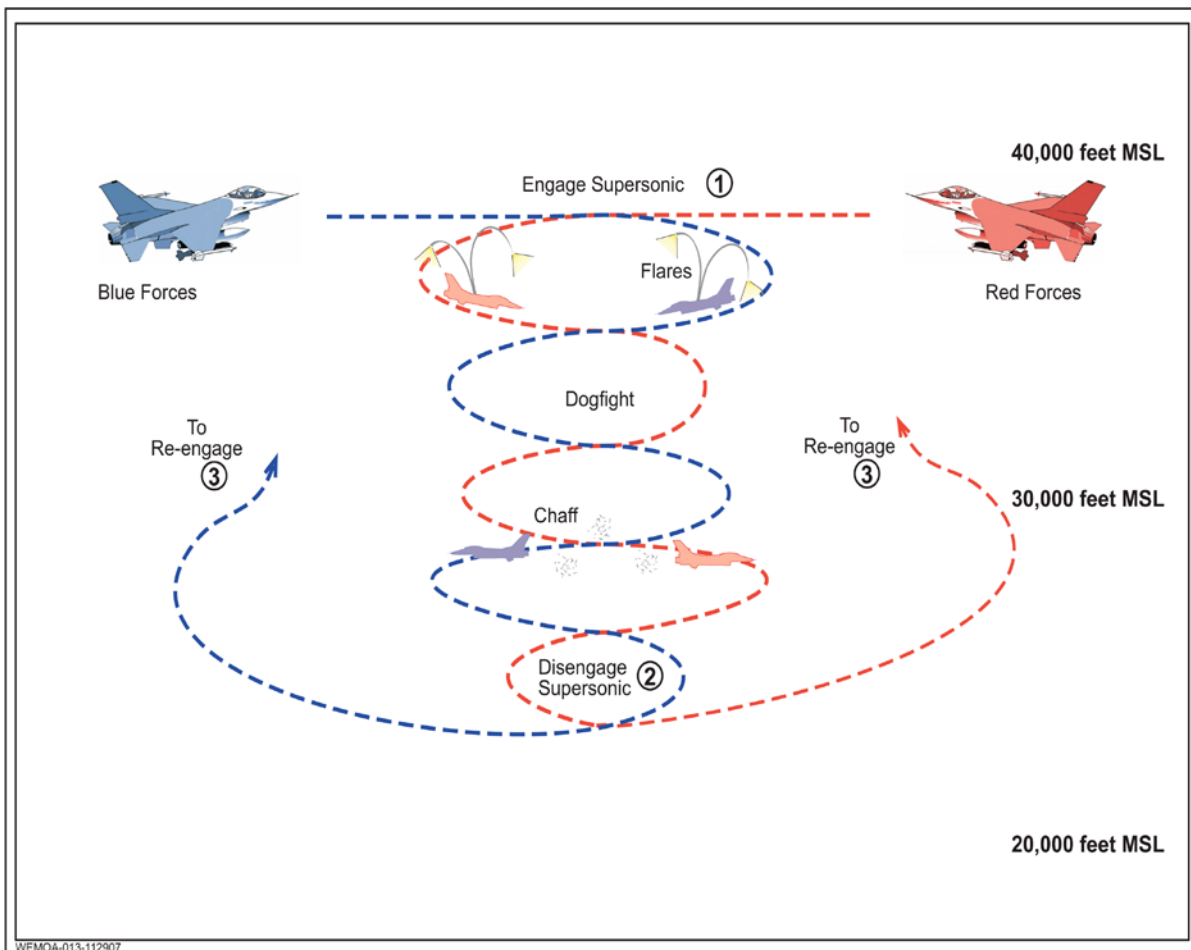


Figure 2-5 Representative Supersonic Training Scenario for F-16 in Currie/Tippet ATCAA

This representative depiction shows an initial engagement at supersonic speeds, a dogfight using defensive countermeasures, and a disengagement at supersonic speeds with a return to engage. After the second engagement, insufficient fuel is left on the aircraft to complete the dogfight with a supersonic disengagement a second time. The supersonic segments would last an estimated 1 to 2 minutes. With refueling, this script could be repeated.

2.2.4 Use of Chaff and Flares

Military aircraft can currently use chaff and defensive flares within most of the existing UTTR. No such authorization applies to the existing Currie/Tippet ATCAA. Under the proposed action, the F-16s would use RR-188 chaff and M-206 defensive flares within the White Elk MOA and the overlying Currie/Tippet ATCAA. In addition, the transients using the airspace may use RR-188 chaff and M-206 defensive flares while observing the same conditions (i.e., weather) observed by the 388 FW. Table 2-9 presents the quantities of chaff and flares proposed for use by both the 388 FW and transient aircraft.

Table 2-9 Proposed Annual Chaff and Flare Use		
	<i>Flares</i>	<i>Chaff</i>
388 th FW F-16s	30,500	39,250
Transient Aircraft	1,130	1,450
Total	31,630	40,700

Pilots use chaff and flares as self-protection measures against radar-directed anti-aircraft artillery and radar-guided and heat-seeking missiles. When pilots detect threats from these systems, they must respond instantly and instinctively using appropriate countermeasures. The inability of pilots to actually use these countermeasures in training results in the loss of critical response patterns. The instinctive nature of these habit patterns often determines a pilot's survivability in a hostile environment (Air Force 2006b).

Each chaff bundle has a 1-inch by 1-inch plastic or nylon end cap, a 1-inch by 1-inch plastic or nylon piston, and a 1-inch by 1-inch felt spacer that falls to the ground. Each flare has a piston, end cap, one or two felt spacers, and a piece of aluminum-coated mylar wrapping (like stiff duct tape) that could be from 1-inch by 1-inch to 2-inches by 13-inches depending on the extent to which the burning flare consumed the wrapper. Based on the total number of devices used, the Air Force estimates that chaff concentrations would be estimated to be approximately 2.29 grams (0.08 ounce) per acre per year. On average, an estimated 0.02 flares would be dispersed per acre per year.

Winds at the altitudes between deployment and the ground would affect the drifting and ultimate deposition of residual materials. The eventual location of chaff fibers would depend on the release altitude and winds at different altitudes. For the purpose of this study, all materials are assumed to fall to the ground under the airspace. This produces estimates of higher concentrations than may actually occur in the environment (Air Force 2006b).

Modern training chaff (termed "angel hair" chaff) consists of bundles of extremely small strands of aluminum-coated silica fibers designed to reflect radio waves. Extremely small and light, chaff remains in the air long enough to confuse enemy radar. Individual chaff fibers are approximately the thickness of a very fine human hair and range in length from 0.3 inch to 1.0 inch or more (0.76 centimeter to 2.5

centimeters). The length of the chaff determines the frequency range of the radio wave it most effectively reflects, so chaff fibers are cut to varying lengths to ensure effectiveness against the wide range of enemy radar systems. The chaff proposed for use in the White Elk MOA and Currie/Tippet ATCAA (RR-188) contains fibers cut to lengths that will not interfere with radars operated by the FAA for Air Traffic Control (ATC). Each bundle of chaff dispenses about 5 million chaff strands. When released from an aircraft, chaff initially forms an “electronic cloud” that disperses widely in the air. Dispersed chaff effectively reflects radar signals and forms an image on a radar screen. If the pilot quickly maneuvers the aircraft while momentarily obscured or “masked” from precise radar detection by the electronic cloud, the aircraft can avoid the threat. With deployment of multiple chaff bundles, each forms a similar cloud that further confuses radar-guided weapons. Chaff itself is not explosive; however, it is ejected from the aircraft pyrotechnically using a small explosive charge that is part of the ejection system. Although the chaff dispenser remains in the aircraft, two 1-inch square by 1/8-inch thick pieces of plastic and a felt spacer eject with the chaff. The chaff fibers separate and are dispersed rapidly. On rare occasions, the chaff may not wholly separate and may fall to earth as a clump.

Defensive training flares consist of magnesium pellets that, when ignited, burn for a short period (3.5 to 5 seconds) at approximately 2,000 degrees Fahrenheit (°F). Flares burn out after falling approximately 400 feet. Since the burn temperature exceeds the exhaust heat of an aircraft engine, it attracts and decoys heat-seeking weapons and sensors targeted on the aircraft. The flares are wrapped with aluminum filament reinforced mylar and inserted into an aluminum case closed with one or two felt spacer(s) and a plastic end cap. The top of the case contains a pyrotechnic impulse cartridge that is activated electrically to produce hot gases that push a one 1-inch square by 1/4-inch thick plastic or nylon slider, a 1-inch by 1-inch by 1/4-inch thick end cap, and the magnesium flare material out of the flare dispenser mounted in the aircraft. The parasitic type flare proposed for use (M-206) ignites as it is ejected from the dispenser and the flare consumes some or nearly all of the wrapping material around the flare. Depending upon the amount of wrapping material consumed by the flare, a piece of aluminum-coated mylar material (similar to stiff duct tape) from 1-inch by 1-inch up to 2-inches by 13-inches could also fall to the ground. On extremely rare occasions (estimated at 0.01 percent), a flare may not ignite and could fall to the earth as a dud flare (Air Force 2006b).

Since the White Elk MOA floor would extend at least 3,100 feet above the ground at any location, the potential for burning material striking the ground would be extremely low. AFI 11-214 (22 December 2005) prescribes a minimum flare release altitude of 2,000 feet AGL over non-government-owned or controlled areas. The standard minimum release altitude provides sufficient time for a flare to burn completely at least 100 feet above the ground. These restrictions make the potential to ignite a fire from flares under this proposal extremely remote. As such, the Air Force proposes no special restrictions or management practices for the use of flares.

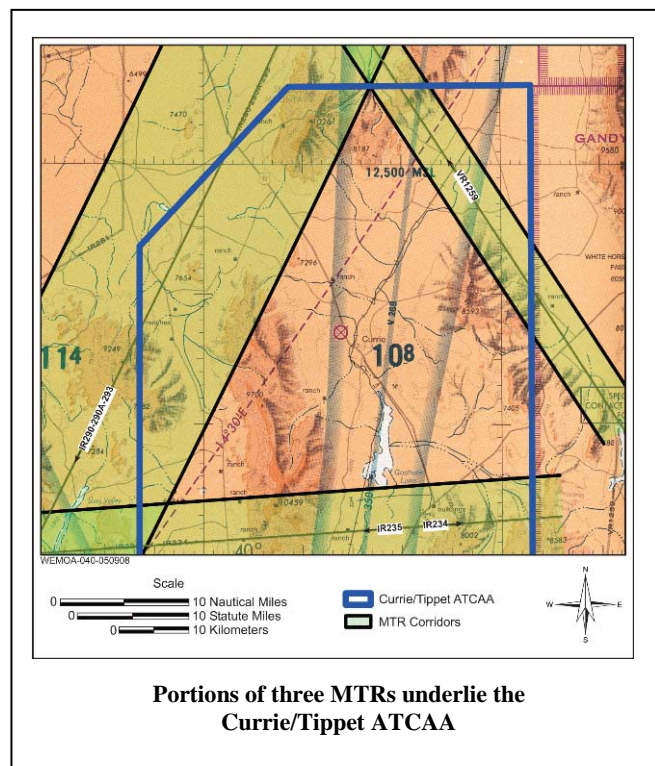
2.3 NO-ACTION ALTERNATIVE

CEQ regulations (40 CFR Part 1502.14(d)) that implement NEPA require analysis of a no-action alternative. “No action” means that the proposed action (i.e., establishment of the White Elk MOA) would not take place, and the resulting environmental effects from taking no action would be compared to the effects of implementing the proposed action. Under the no-action alternative for this EIS, the White Elk MOA would not be established, supersonic activities in the Currie/Tippet ATCAA would not be authorized, and no defensive countermeasures (chaff and flares) would be employed in the airspace. The no-action alternative could jeopardize the capability of the 388 FW pilots to perform effectively in real-world conflicts. Lack of consistently available airspace for the 388 FW would prevent completion of RAP requirements and affect combat-ready status. The F-16s would need to continue to use marginal workarounds to meet training objectives to the degree possible. The following descriptions of the current status of the Currie/Tippet ATCAA and UTTR provide a context for comparing the changes that would occur with the proposed action.

2.3.1 UTTR Airspace Structure

Aircraft from Hill AFB and elsewhere would continue to conduct testing and training operations at UTTR. As detailed previously (refer to Figure 2-3), UTTR consists of Restricted Areas, MOAs, and ATCAAs. The Currie/Tippet ATCAA would provide limited use to the 388 FW, whereas the remainder of the UTTR airspace would be dominated by testing activities. Under the no-action alternative, the structure and management of these airspace units would remain unchanged.

In addition, portions of three Military Training Routes (MTRs) traverse under the affected area defined by the Currie/Tippet ATCAA. MTRs are flight corridors used for high-speed, low altitude training, generally below 10,000 feet MSL. They consist of a well defined centerline and horizontal limits, with vertical limits described by a lower and upper altitude along the flight track. Two types of MTRs exist: IR and VR. IRs permit aircraft to operate under both instrument and visual flight conditions; VRs require the use of visual flight rules only.



The three MTRs under the ATCAA include IR-234/235 (reciprocal tracks), IR-293, and VR-1259. Segments of IR-234/235 cross the central portion of the area from east to west with a lower altitude limit of the surface. For IR-293, the segments extend southwest to northeast across the area under the ATCAA; the floor altitude along this route is 100 feet AGL. VR-1259 transects the northern edge of the area with segments rated to 200 feet AGL.

The 388 FW would also continue to use remote airspace complexes like NTTR occasionally. This remote training airspace receives use by thousands of aircraft from other bases (Air Force 1999). The 388 FW aircraft account for a minimal proportion of total training activities. For this reason, these remote airspace units receive no further analysis in this EIS.

2.3.2 Training Operations in the Currie/Tippet ATCAA

The existing Currie/Tippet ATCAA supports limited activity by the 388 FW and even less by transient users (refer to Table 2-3). In total, aircraft conducted 548 sortie-operations in the ATCAA in fiscal year 2007; the 388 FW performed 451 of these sortie-operations. The Currie/Tippet ATCAA currently supports about 2 sortie-operations per flying day. This level of use would likely continue without the availability of the White Elk MOA.

Missions in the ATCAA would continue to be limited to TI due to the lack of lower altitude airspace. Operational parameters for the aircraft, including duration and altitude profiles, would remain unchanged. Refer to Table 2-6 and the associated discussion in Section 2.2.2 for details.

For the MTRs, use would continue unaffected under the no-action alternative. In 2007, aircraft flew a total of 152 sorties-operations on IR-293 and VR-1259 combined; IR-234/235 remained active, although it received no use in 2007. Low-altitude bomber training by B-1s and B-52s account for the few sortie-operations conducted on the MTRs.

2.3.3 Supersonic Flight

No supersonic flight is authorized or expected in the Currie/Tippet ATCAA under the no-action alternative. Test and training activities on the remainder of UTTR require the use of supersonic flight during exercises, so the Air Force established portions of UTTR as Supersonic Operating Areas (SOA) (refer to Figure 2-4). These areas allow supersonic flight below 30,000 feet MSL and over 5,000 feet AGL (Hill AFB 1999). As such, the 388 FW would need to continue to schedule and use these areas, if possible, to fulfill the requirement for supersonic training.

2.3.4 Use of Chaff and Flares

No use of chaff or flares would occur in the Currie/Tippet ATCAA. To perform these elements of combat training, the 388 FW would need to continue to employ chaff and flares during use of the UTTR. This use, of course, would remain limited due to scheduling and accessibility issues.

Chaff and flare deployment on the UTTR would continue to be governed by a series of regulations based on safety and environmental considerations and limitations. These regulations establish procedures governing the use of chaff and flares over ranges, other government-owned and controlled lands, and nongovernment-owned or controlled areas. Air Combat Command has set standard minimum-release altitudes (AFI 11-214, 22 December 2005) for flares over government-owned and controlled lands. In training areas over other than government-owned or controlled property, minimum flare employment altitude is 2,000 feet AGL minimizing the risk of flare-caused fires.

2.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

2.4.1 Regulatory Requirements

This EIS was prepared in compliance with NEPA and associated regulations. NEPA (Public Law 91-190, 42 U.S.C. 4321-4347, as amended) was enacted to establish a national policy for the protection of the environment. It also established the CEQ to implement the provisions of NEPA and review and appraise federal programs and activities in light of NEPA policy. CEQ developed Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508). These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing EISs to comply with NEPA. 32 CFR Part 989, which implements the CEQ regulations with regard to Air Force actions, defines the steps and milestones in the Environmental Impact Analysis Process (EIAP). The major milestones in the EIAP for the proposed White Elk MOA include the following:

- publishing a Notice of Intent (NOI) to prepare an EIS;
- conducting public scoping meetings and inviting public and agency input to determine and define the significant issues to be addressed in the EIS;
- collecting data on the affected environment to provide a baseline for analyzing the effects of the proposed action and alternatives;
- assessing the potential impacts of the proposed action and no-action alternative on the environment;
- preparing and distributing a Draft EIS for public review and comment;
- establishing a public review period, including public hearings to solicit comments on the analysis presented in the Draft EIS;
- preparing and distributing a Final EIS incorporating all comments received on the Draft EIS and responding to the substantive issues raised during the public review period; and

- publishing a ROD no sooner than 30 days after the availability of the Final EIS, outlining the Air Force's decision.

Permits: No permits are expected to be required for implementing the proposed action.

Government-to-Government Consultation: Several laws and regulations address the requirement of federal agencies to notify or consult with American Indian tribes or otherwise consider their interests when planning and implementing federal undertakings. In particular, on April 29, 1994, the President issued the *Memorandum on Government-to-Government Relations with Native American Tribal Governments*, which specifies a commitment to developing more effective day-to-day working relationships with sovereign tribal governments. Among the provisions of this memorandum are the following requirements:

- The head of each executive department and agency shall be responsible for ensuring that the department or agency operates within a government-to-government relationship with federally recognized tribal governments.
- Each executive department and agency shall consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally-recognized tribal governments. All such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals.
- Each executive department and agency shall assess the impact of federal government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, and activities.
- Each executive department and agency shall take appropriate steps to remove any procedural impediments to working directly and effectively with tribal governments on activities that affect the trust property and/or governmental rights of the tribes.

As part of the NEPA process, the Air Force contacted 37 American Indian tribes, colonies, and other organizations regarding the Air Force proposal. Groups contacted included those who live in the vicinity of the project area and those who had potential ancestral ties to the project area in the past. The list was compiled from the 19 tribes contacted by Hill AFB as part of their consultation process and additional tribes included in consultation with the Elko and Ely Districts of the BLM. These groups were contacted through IICEP letters describing the proposed project and via telephone to confirm receipt of the IICEP letters and invitations to public meetings regarding the airspace proposal.

Only the Navajo Nation responded to the IICEP letters, concluding the proposed MOA would not impact any Navajo traditional cultural properties or historical properties. During a meeting to specifically discuss any American Indian concerns, three members of the Goshute Indian Reservation expressed concerns about aircraft crashes, noise, and overflight effects on the local economy. At a public meeting, a representative of the Te-Moak Tribe expressed concerns about sacred ancestral property under the

proposed White Elk MOA, especially regarding interruption of religious ceremonies as a result of noise and visual intrusions from aircraft overflights. In October 2009, the Air Force attempted to contact the chairperson of the Te-Moak Tribe of Western Shoshone Indians of Nevada requesting their assistance in identifying any potential impact to areas of traditional importance to the tribe; no comments or responses were received. In October 2010, the Nevada State Historic Preservation Office (SHPO) documented that the Air Force had made a reasonable and good faith effort to identify historic properties that could be affected by this undertaking and issued concurrence with the Air Force's determination that the proposed action would not pose an adverse effect to historic properties.

Section 106 Consultation: As required by law and regulation, the Air Force consulted with the Nevada SHPO regarding impacts to cultural resources eligible to the National Register of Historic Places. Section 106 consultation was initiated March 2009 pursuant to the National Historic Preservation Act. As part of this consultation with the Nevada SHPO, the Air Force prepared *NHPA Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada*. In response, the Ely District BLM requested that the Air Force implement a five-year monitoring plan of historic structures within the Cherry Creek Mining District. The Air Force agreed to coordinate and finalize a monitoring plan with both the Ely District BLM and Nevada SHPO as part of the mitigations for the proposed action. Nevada SHPO concurrence with the Air Force's determination that the proposed action would not adversely affect historic properties completed Section 106 consultation.

2.4.2 Cooperating Agency and Intergovernmental Notification

Both NEPA and CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental impacts. NEPA and CEQ also emphasize cooperating agency involvement particularly when the invited agency has jurisdiction over the action. Agencies which have a special expertise in the environment may also be invited to be a cooperating agency. The FAA has both jurisdiction and expertise in airspace actions. The FAA is a Cooperating Agency for this proposed action.

The BLM and the US Forest Service manage much of the land below the proposed MOA. While not formal cooperating agencies, the Air Force consulted with these agencies to address their concerns. Additionally, through the process of IICEP, concerned federal, state, and local agencies (such as the Nevada Division of Environmental Protection and the Nevada SHPO) must be notified and allowed sufficient time to evaluate potential environmental impacts of a proposed action. This was accomplished in two ways: 1) agencies were contacted early in the EIS process through interagency correspondence to solicit their comments on the proposed action and no-action alternative, and 2) the Air Force also conducted scoping meetings. Appendix B provides a summary of public participation and consultation including a sample copy of the IICEP letter, a list of recipients, and any responses recorded. Comments from these agencies were reviewed for incorporation into the environmental analysis.

2.4.3 Public Involvement Process

AFI 32-7061, as promulgated in 32 CFR 989, and CEQ regulations require an early and open process for identifying significant issues related to a proposed action and obtaining input from the public prior to making a decision that could potentially affect the environment. These regulations specify public involvement at various junctures in the development of an EIS, including public scoping prior to the preparation of a Draft EIS, and public review of the Draft EIS prior to finalizing the document and making a decision. Appendix B of this EIS includes a summary of public participation and the materials disseminated during this process.

Scoping

Prior to the publication of the Draft EIS, the public involvement process included publishing the NOI in the *Federal Register* on November 28, 2007. After public notification in newspapers and radio stations, three scoping meetings averaging 2 hours in duration, were held December 18 through December 20, 2007 at the following Nevada locations: Ely, Elko, and West Wendover. A total of 16 people attended the meetings and provided comments. By the end of the scoping period on January 7, 2008, the Air force received 12 comment letters. Two additional comment letters were received after the official scoping period ended, and these were considered as well in preparation of the Draft EIS.

The Elko County Commissioner's office sent comments expressing concerns on the potential impacts to the local economy including: land restrictions for development, building height restrictions, commercial/civil flight restrictions, potential impacts to wind energy projects and power plants, loss of revenue at Wendover and Ely airports, impacts to wilderness study areas, and effects to commercial tourism activities. The Commissioner's office also expressed concern about the amount of already restricted airspace and the current activities of aircraft flying low and shattering windows—expansion of this airspace would only increase the number of low-flying aircraft and windows shattering.

Public Comment Period

Following the scoping period, the Air Force prepared a Draft EIS and made it available to the public and agencies for review and comment. The document was sent to those in the public who requested a copy and was made available at selected public facilities such as libraries and local government agencies within Nevada. The public review and comment period for the Draft EIS began with the notice of availability published in the *Federal Register* on August 15, 2008. During this period, the Air Force held formal hearings in the same three communities where scoping meetings occurred to provide an opportunity for the public to evaluate the proposal and the analysis contained within the Draft EIS. By request of Senator Harry Reid from Nevada, the public review period was extended to November 13, 2008. A total of six people commented at these meetings.

The 90-day public comment period yielded 22 comment letters from members of the communities, elected officials, agencies, and non-governmental organizations. The Air Force reviewed and analyzed 22 written comment letters and 6 verbal comments that included more than 200 individual issues, concerns, or questions.

Based on the oral comments at the public hearings and written comments received during the public comment period for the White Elk MOA draft EIS, the primary issues surrounded potential glider and other general aviation conflicts at Yelland Field in Ely. Ely is a destination spot for professional glider pilots from around the world. Approximately 40 glider pilots stay in Ely for four (4) to six (6) weeks in the summer to wait for good wind conditions for soaring. Once airborne, gliders may stay in the air for up to twelve (12) hours at a time. The proposed White Elk MOA would occupy a portion of airspace used by glider pilots during their flight season. While the White Elk MOA does not restrict air space use, White Pine County representatives and others associated with Yelland Field operations anticipate reduced numbers of glider flights due to perceived conflicts with sorties in the MOA. Individuals expressed concerns about indirect socioeconomic impacts due to potential reduction in glider pilot visits to Ely. General aviation issues included longer flight times for medical evacuation flights while the MOA was activated, and potential airspace conflicts with new commercial air services. The Ely Airport Advisory Board expects the proposed action to conflict with its development planning activities, including an FAA Airport Improvement grant to expand the runway length to 9,000 feet and improve precision approach capabilities. The Board anticipates new economic initiatives to be tied to granting activities and is concerned the proposed action will impede or preclude its planned growth. Additional issues brought forth during the public hearings were air quality impacts from aircraft and from chaff and flare disintegration; and the possible presence of bat migration corridors in the proposed MOA.

Comments received during the public review and comment period are addressed in this Final EIS and provided to the decision maker for consideration. These comments and responses are provided in Appendix A.

A copy of the Final EIS has been made available to the public. This EIS includes responses to comments received during the public comment period. After a minimum of 30 days of review, the Air Force may publish a ROD. The ROD will specify the selected alternative, how it will be implemented, and mitigation measures, if any, that would be employed to reduce environmental impacts.

2.5 SUMMARY OF IMPACTS

Table 2-10 presents a summary of the impacts associated with the proposed establishment of the White Elk MOA and the use of chaff and flares in the MOA/ATCAA and supersonic operations in the ATCAA. The table compares the effects of the proposed action to those of the no-action alternative.

Table 2-10 Comparison of Alternatives by Resource and Potential Impact

<i>Proposed Action</i>	<i>No-Action Alternative</i>
AIRSPACE AND AIRCRAFT OPERATIONS	
<ul style="list-style-type: none"> • UTTR airspace volume would increase by 1.4 percent • Annual sortie-operations in the MOA/ATCAA would total 9,590 • Vertical and horizontal structure of MOA designed to avoid impacts to airports and minimize effects to commercial air traffic routes and civil air traffic • Interactions with gliders may occur; 388 FW would schedule to avoid significant conflicts 	<ul style="list-style-type: none"> • UTTR airspace would not expand • Limited use of ATCAA would maintain sortie-operations at low levels (less than 400 annually) • Potential effects with airports, commercial and civil air traffic, and gliders would continue to be minimal • No change
NOISE	
<ul style="list-style-type: none"> • Subsonic noise would not exceed DNL 45 dB • One sonic boom could be heard about once every two flying days at the center of the airspace with up to 10 occurring each flying day throughout the entire airspace • CDNL values of up to 49 dB at the center of the ATCAA airspace; this does not exceed the level identified by USEPA as protective of public health • Average peak overpressure would be under 1psf with a small probability of booms exceeding 6 or 7 psf; sonic booms are not expected to damage most structures although damage to deteriorated structures could occur 	<ul style="list-style-type: none"> • Baseline noise would remain below DNL 45 dB • No sonic booms or supersonic noise in the existing Currie/Tippet ATCAA
SAFETY	
<ul style="list-style-type: none"> • Training operations would continue to be performed in accordance with all safety directives • No anticipated increase to bird-aircraft strikes; flight activities would all occur above 3,000 feet AGL; less than 5 percent of bird-strikes occur above this altitude • Statistically estimated years between Class A mishaps for F-16s would change from 1 in 139 years to 1 in 6.4 years but would still pose minimal risk 	<ul style="list-style-type: none"> • Training operations are performed in accordance with applicable Air Force safety regulations • ATCAA floor above altitude 95 percent of birds fly; bird-aircraft strikes would remain low • Statistically estimated years between Class A mishaps for F-16s would remain minimal at 1 in 139 years
LAND USE, RECREATION, AND VISUAL	
<ul style="list-style-type: none"> • Land status and land use patterns would not be altered • Sonic booms would not adversely impact land use • Noise heard in wilderness and wilderness study areas would increase, but remain at low subsonic (<45 DNL) and supersonic (49 CDNL) levels • Visual observance of contrails in ATCAA would be expected to increase; contrails would not alter BLM visual classifications 	<ul style="list-style-type: none"> • Land status and management to remain unchanged • No sonic booms • Noise levels in wilderness areas would remain below DNL 45 dB • Few contrails could be observed due to limited operations in ATCAA
BIOLOGICAL RESOURCES	
<ul style="list-style-type: none"> • No federally listed plant or animal species exist under the proposed airspace; no impact anticipated • Wildlife would habituate to low-levels of subsonic noise and to noise generated by sonic booms occurring at low frequencies (approximately one boom every two flying days) • No impact to wildlife or vegetation from chaff and flare use or residual material • No wetlands occur within the affected region 	<ul style="list-style-type: none"> • No federally listed plant or animal species exist under the proposed airspace • Condition of vegetation, wildlife, and wetlands would remain at status quo • Low subsonic noise levels from ATCAA operations would not affect wildlife • No change

Table 2-10 Comparison of Alternatives by Resource and Potential Impact (con't)	
<i>Proposed Action</i>	<i>No-Action Alternative</i>
CULTURAL RESOURCES	
<ul style="list-style-type: none"> No effects on 3 National Register properties located under the MOA/ATCAA Vibrations from sonic booms would have a negligible impact to historic structures No effect on traditional resources as none identified under the airspace Impacts to cultural resources from fire due to chaff and flares or aircraft mishap would not be anticipated 	<ul style="list-style-type: none"> No effect on any National Register properties No sonic booms No known traditional resources No change
SOCIOECONOMICS	
<ul style="list-style-type: none"> General aviation would remain unchanged under visual flight rule conditions No anticipated impacts to development projects in the region 	<ul style="list-style-type: none"> Socioeconomic conditions would remain unchanged No change; status quo
ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN	
<ul style="list-style-type: none"> No disproportionate impacts expected due to rarity of events at a single location Subsonic noise would remain below DNL 45 dB ; supersonic noise would remain below CDNL 49 dB Sonic booms could be heard at McGill Elementary; no adverse impacts to children expected 	<ul style="list-style-type: none"> Less than 200 persons under the ATCAA airspace Subsonic noise would remain below DNL 45 dB No sonic booms
AMERICAN INDIAN CONCERNS	
<ul style="list-style-type: none"> No anticipated impact to traditional cultural ceremonies or resources from subsonic noise or sonic booms as described under the proposed action 	<ul style="list-style-type: none"> Areas of concern to American Indians would remain unchanged

3.0 AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

3.1 ANALYSIS APPROACH

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative. It also provides that an EIS should consider, but not analyze in detail, those areas or resources not potentially affected by the proposal. Therefore, an EIS should not be encyclopedic; rather, it should be succinct and to the point. Both description and analysis in an EIS should provide sufficient detail and depth to ensure that the agency (i.e., Air Force) took a hard look. NEPA also requires a comparative analysis that allows decisionmakers and the public to differentiate among the alternatives. This EIS focuses on those resources that would be affected by establishing the White Elk MOA, use of authorized chaff and flares in the MOA and overlying Currie/Tippet ATCAA, and supersonic flight in the Currie/Tippet ATCAA in eastern Nevada.

CEQ regulations (40 CFR Parts 1500-1508) for NEPA also require an EIS to discuss impacts in proportion to their significance and present only enough discussion of other than significant issues to show why more study is not warranted. The analysis in this EIS considers the current conditions, or baseline, of the affected environment and compares those to conditions that might occur should the Air Force implement either the proposed action or no-action alternative.

3.1.1 Definition of Baseline

Baseline conditions provide a benchmark against which an agency measures the effects of the proposed action. The difference in the conditions between the current (i.e., baseline) and proposed action reflects the magnitude of impacts relative to the various resources analyzed. As such, the EIS must define the baseline conditions.

For the proposed action, establishing baseline conditions is based on the existing use of the airspace. In 2005, the SLC ARTCC entered into a letter of agreement (LOA) with Hill AFB which established the Currie/Tippet ATCAA (previously called White Elk Extension) and defined the terms of its use (SLC ARTCC 2005). Clover Control had responsibility for control, separation, and coordination of non-participating aircraft when the ATCAA was activated. The LOA was revised in 2007 to establish IFR operating procedures for Hill AFB aircrews and transient aircraft (SLC ARTCC 2007).

In fiscal year 2007, approximately 548 sortie operations were flown in the Currie/Tippet ATCAA. Aircraft are currently not authorized to fly supersonic in the Currie/Tippet ATCAA and chaff and flare are not currently authorized for use in the airspace. Segments of three MTRs below the proposed MOA are used; approximately 150 sorties are flown annually on these MTRs.

Under the proposed action, 9,590 sortie operations would be conducted annually in the White Elk MOA and Currie/Tippet ATCAA. Aircraft would be authorized to conduct supersonic flight in the ATCAA and chaff and flares would be permitted for use in the MOA/ATCAA. Refer to Chapter 2 for a complete description of the proposed action.

3.1.2 Affected Areas

The geographic scope of potential impacts includes those communities and resources that could be either directly or indirectly affected by a proposed action or alternative. Under this proposal, aircraft operations would be conducted above communities located in White Pine and Elko Counties in Nevada. Therefore, the focus of environmental analysis considers those resources that could be affected by implementation of the proposed action or no-action alternative in the communities underneath and adjacent to the proposed White Elk MOA and overlying Currie/Tippet ATCAA.

3.1.3 Affected Environment and Resources Analyzed

Based on the comments received from scoping, the Air Force defined the resources potentially affected by aircraft operations in the proposed White Elk MOA and overlying Currie/Tippet ATCAA. This definition focused on specific resource categories. The FAA is a cooperating agency on this EIS. As such, several resource categories presented in FAA Order 1050.1E, Appendix A were considered. Table 3.1-1 presents the resources that have been identified as potentially affected by the proposed action and no-action alternative.

The following resources have been evaluated in this EIS: airspace and aircraft operations; noise; safety; land use, recreation, and visual; biological resources; cultural resources; socioeconomics; environmental justice and protection of children; and American Indian concerns. Where applicable, Air Force and FAA resources have been combined for simplification.

3.1.4 Resources Not Carried Forward for Detailed Analysis

Several resources were assessed, that in accordance with CEQ regulations, warrant no further analysis in this EIS (refer to Table 3.1-1). The following rationale supports this decision.

Table 3.1-1 Resources Analyzed in the Environmental Impact Analysis Process			
Air Force		FAA	
<i>Resource</i>	<i>Carried Forward for Detailed Analysis</i>		<i>Carried Forward for Detailed Analysis</i>
Airspace and Aircraft Operations	Yes	Department of Transportation Act: Section 4(f); Construction Impacts; Secondary (Induced Impacts)	No
Noise (Subsonic and Supersonic)	Yes	Noise and Compatible Land Use	Yes
Safety	Yes	Light Emissions	No
Land Use, Recreation, and Visual	Yes	Farmlands and Visual Impacts	
Biological Resources	Yes	Fish, Wildlife, Plants; Wetlands	Yes
Cultural Resources	Yes	Historical, Architectural, Archeological, and Cultural Resources	Yes
Socioeconomics	Yes	Socioeconomic Impact	Yes
Environmental Justice and Protection of Children	Yes	Environmental Justice and Children's Environmental Health and Safety Risks	Yes
American Indian Concerns	Yes	Air Quality	No
Air Quality	No		
Global Climate Change	No		
Soils and Water	No	Water Quality; Natural Resource; Energy Supply; Wild and Scenic Rivers; Coastal Resources and Floodplains	No
Hazardous Materials and Waste	No	Hazardous Materials, Pollution Prevention, and Solid Waste	No

Air quality in a given location is described by the concentration of various pollutants in the atmosphere. The significance of the pollutant concentration is determined by comparing it to the federal and state ambient air quality standards. The Clean Air Act and its subsequent amendments established the National Ambient Air Quality Standards (NAAQS) for seven “criteria” pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter less than 10 and 2.5 microns, and lead. These standards represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. The Nevada Department of Environmental Protection, Bureau of Air Quality has adopted the NAAQS, with the following exceptions and additions: 1) the state annual sulfur dioxide standard is more stringent than the national standard, 2) Nevada has added an 8-hour carbon monoxide standard specific to elevations greater than 5,000 feet

above mean sea level, and 3) Nevada has added standards for visibility impairment and 1-hour hydrogen sulfide concentrations.

The Clean Air Act requires each state to develop a State Implementation Plan (SIP) which is its primary mechanism for ensuring that the NAAQS are achieved and/or maintained within that state. According to plans outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria pollutants. The Clean Air Act provides that federal actions in nonattainment and maintenance areas conform to the CAA by not hindering future attainment with the NAAQS and conform with the applicable SIP (i.e., Nevada SIP). There are no specific conformity requirements for federal actions in unclassified or attainment areas. The area in which the proposed White Elk MOA is located is in attainment.

The affected area for air quality can vary from 0.3 to 2.5 miles (urban scale) up to 2 to 31 miles or more (regional scale), depending on the pollutant being studied. These scales are adopted from United States Environmental Protection Agency (USEPA) regulations concerning ambient air quality monitoring. The affected area for air quality also has a vertical dimension because the emissions occur in a volume of air. This vertical dimension depends upon climatic conditions. The upper vertical limits of the affected area equate to the mixing height for emissions, which varies region to region based on daily temperature changes, amount of sunlight, winds, and other climatic factors. Emissions released above the mixing height become so widely dispersed before reaching ground level that potential ground-level effects would not be measurable.

Studies using 62 National Weather Service stations throughout the U.S. (Holzworth 1972) provide a measure of the meteorological conditions to define mixing heights. Data in the studies specific to this proposal were derived from the National Weather Service Ely, Nevada upper-air observation station. For the areas under this proposal, mixing heights average about 633 feet (193 meters) AGL in the morning and 3,517 feet (1,072 meters) AGL in the afternoon. Based on this pattern and other meteorological conditions, the average mixing height is considered to be 1,425 feet AGL for this analysis. Under this Air Force proposal, the floor of the White Elk MOA would be 14,000 feet MSL, or averaging from approximately 3,100 to 8,500 feet AGL. Approximately 15 percent of the annual sortie operations (i.e., 1,439) would occur in the MOA airspace. No impacts to air quality would be expected as all sortie operations would occur above the mixing height in the region; therefore, further analysis of this resource is not warranted.

Global Climate Change. Concerns exist about the potential for human activities to contribute to the concentration of greenhouse gases which may impact the earth's atmosphere. Some studies suggest that the surface temperature of the earth has increased because of the presence in the air of gases that absorb infrared radiation; infrared gases considered potentially responsible for the effect are termed "greenhouse gases." The primary greenhouse gases are carbon dioxide, methane, nitrous oxides, and halocarbons.

The proposed action is not expected to increase baseline contributions to greenhouse gases. Annual sortie operations conducted by the 388 FW F-16 aircraft would not increase under this proposal; rather, combat training operations that cannot be conducted in the UTTR airspace due to priority scheduling of other missions would be conducted in the White Elk MOA and Currie/Tippet ATCAA airspace resulting in a redistribution of sortie operations instead of additional sortie operations. As such, this action would not result in an increase in greenhouse gases or add to the issue of global climate change.

Soils and water resources generally refers to soil composition and ground water and hydrology in the proposal area. Deployment of authorized chaff and self-protection flares in the MOA and overlying ATCAA represent the only potential impact to soils and water resources from the proposed action. The surface area under the Currie/Tippet ATCAA is 1,689,062 acres.

The constituents of chaff (see Appendix D) occur naturally in the environment. Aluminum, the major component of the chaff fiber coating is one of the most abundant metals in the earth's crust, air, and water. Silica, the primary component of the glass chaff fibers, is highly prevalent in soils, rocks, and sand. In extremely high levels (e.g., kilograms) accumulated chaff fibers would have the potential to generate adverse effects to these resources (Air Force 1997). The weight of chaff material in a standard cartridge is 95 grams. Based on the quantity of chaff bundles proposed for deployment in the MOA/ATCAA, the distribution of chaff would be approximately 2.29 grams per acre per year.

Flares are designed to completely burn out (within 3.5 to 5 seconds) leaving only incidental residual materials (i.e., end cap and felt spacer) to fall to the ground. Flare ash could affect water resources only in extremely large quantities. A partially burned flare or a dud flare has the potential to impact soil or water properties through reaction of the water with the flare constituents (see Appendix E). Magnesium, an essential nutrient found in nuts, seafood and cereals, is the principal material in flare pellets. Only in extremely large quantities can magnesium affect water properties; given the number, dispersal, and reliability of flares, accumulations of such levels would be impossible. Since aircraft operations in the proposed MOA would be dispersed through the horizontal limits of the airspace, no one location would receive a consistent distribution of flares. On average, an estimated 0.02 flares would be dispersed in the MOA/ATCAA per acre per year.

A partially burned flare could ignite a fire potentially affecting soil and water properties; however, AFI 11-214 (22 December 2005) prescribes a minimum flare employment altitude of 2,000 feet AGL over non-government owned or controlled property (Air Force 2005), thereby reducing, if not eliminating, the risk of fire. Fire safety is discussed in Section 3.4.

While there is a small chance that chaff fibers, flare ash, or dud flares could collect on water surfaces, the potential effect is considered minimal. Again, the probability of such residual materials being deposited in any one location would be minuscule due to random flight operations and dispersal of chaff and flares.

Therefore, impacts to water resources would be insignificant if the proposed action were implemented. In summary, the use of authorized chaff and self-protection flares in the proposed White Elk MOA and overlying Currie/Tippet ATCAA would not have an adverse impact on soil and water resources and is not further analyzed within this EIS.

Water quality in the region would not be adversely impacted by the proposed action. In addition, the region of influence is not in a *Coastal Zone* or *Floodplain* and no *Wild and Scenic Rivers* exist; therefore, analysis of potential impacts to these resources is not considered further in this EIS. Since it is not anticipated that additional fuel or energy supplies would be required to implement the proposed action, no further analysis of this resource was conducted.

Department of Transportation, Construction, and Secondary Induced Impacts have not been considered further in this analysis. The proposal would not require the use or modification of any publicly owned land. In addition, designation of airspace for military flight operations is exempt from the Department of Transportation Act, Section 4(f). The proposal to establish the White Elk MOA would not involve any construction activities or affect land transportation resources. As such, this EA has not further analyzed construction impacts. No known secondary induced impacts as described in FAA 1050.1E would be anticipated or expected from either the proposed action or no-action alternative.

Light Emissions from aircraft operations would be minimal. Approximately five percent of training operations would occur in the evening hours and flight activity would not occur below 14,000 feet MSL. Additionally, flares usage, if authorized would not be released below 14,000 feet MSL. Flares are not authorized in the MOA, so there would be no additional source of light emissions generated. No consequences through implementation of the proposed action or no-action alternative would be expected to this resource; therefore, no further analysis is warranted. In addition, MTR utilization under this proposal would not change.

Hazardous Materials and Hazardous Waste Management, Pollution Prevention, and Solid Waste. Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation and Liability Act; the Occupational Safety and Health Act; and the Emergency Planning and Community Right-to-Know-Act. Resource Conservation and Recovery Act (RCRA) defines hazardous waste as any solid, liquid, contained gaseous or semisolid waste, or any combination of waste that could or do pose a substantial hazard to human health or the environment. Waste may be classified as hazardous because of its toxicity, reactivity, ignitability, or corrosiveness. The airspace actions identified under this Air Force proposal do not involve construction activities, and do not involve activities that would introduce hazardous materials, hazardous or solid waste, or require pollution prevention measures; therefore, these resources have not been further assessed.

3.2 AIRSPACE AND AIRCRAFT OPERATIONS

The safe, orderly, and compatible use of the nation's airspace is made possible through a system of flight rules and regulations, airspace management actions, and air traffic control procedures just as use of the nation's highway system is governed by traffic laws and rules for operating vehicles. The national airspace system is designed and managed to protect aircraft operations around most airports and along air traffic routes connecting these airports, as well as within special areas where activities such as military flight training are conducted. The FAA has the overall responsibility for managing the airspace system and accomplishes this through close coordination with state aviation and airport planners, military airspace managers, and other entities.

This section describes how the airspace, flight routes, and operating procedures have been designed to accommodate both military training and civil aircraft operations in the affected areas encompassing the UTTR. Discussions of the UTTR include the current restricted areas and MOAs supporting Hill AFB operations. Information was obtained from current aeronautical maps, flight information publications, Hill AFB documents, and contacts with Air Force and FAA airspace and air traffic control management personnel.

3.2.1 Utah Test and Training Range Airspace

The UTTR is approximately 50 miles west of Hill AFB and encompasses 12,574 square nm. As noted in Chapter 1, UTTR airspace consists of Restricted Areas, MOAs, and ATCAAs. Figure 1-3 provides a depiction of the types of training airspace. Some UTTR airspace units support supersonic flight (refer to Figure 2-4) and use of training chaff and flares.

Low-altitude avoidance and noise-sensitive areas are identified in flight instructions for various locations within and adjacent to the UTTR. Military pilots are instructed to avoid these locations by horizontal and vertical distances to enhance flight safety, noise abatement, and environmental sensitivity. When flying, aircrews comply with FAA avoidance rules (Part 91.114). Aircraft must avoid congested areas of a city, town, or settlement or any open-air assembly of people by 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. Outside congested areas, aircraft must avoid persons, vessels, vehicles, or structures by 500 feet.

Restricted Areas

A restricted area is special use airspace within which flight by non-participating aircraft, while not wholly prohibited, is subject to restriction during scheduled periods when hazardous activities are being performed (14 CFR Part 1.1). Restricted areas designated as "joint use" by the FAA permit ATC to route nonparticipating aircraft through this airspace when it is not in use or when appropriate separation can be

provided. Restricted areas within the UTTR are used for conventional bombing; gunnery testing and training; and include a replica of an electronic battlefield with numerous simulated tactical targets such as tank convoys, munitions storage and sites, regimental/battery, air defense artillery units, and others.

Military Operations Areas

A MOA separates and segregates certain nonhazardous military activities from instrument flight rules aircraft and identifies for visual flight rules aircraft where these activities are conducted. Refer to Figure 1-1 for details of existing UTTR MOAs. The Lucin, Gandy, and Sevier MOAs are used for air-to-air intercept training and air refueling. The base altitude of these MOAs is 100 feet AGL, and unlike the UTTR restricted areas which go down to the surface, these areas are only used for air-to-air operations. No ordnance are released in the MOAs. Air-to-air training may include abrupt maneuvers that may involve supersonic flight; Gandy MOA is approved for supersonic operations.

The Lucin MOA comprises the northern portion of UTTR and is normally scheduled and used during daylight hours Monday through Saturday. Any change to this normal schedule is disseminated by a Notice to Airmen (NOTAM) that advises all military and civil pilots of the use status. The Lucin MOA is divided into subsections (Lucin A, B, and C), which are used individually or in combination for air-to-air training. The Gandy MOA runs along the western edge of UTTR with altitudes of 100 feet AGL to 18,000 MSL. The Sevier MOA is located in the southern portion of UTTR. This airspace is normally controlled by the FAA SLC ARTCC when not activated for UTTR use. When needed for military use, the Sevier MOA is scheduled with the SLC ARTCC in advance and IFR civil flights are provided the appropriate IFR separation from military operations.

Since MOA operations are considered nonhazardous, VFR pilots may fly through a MOA when it is in use while exercising see-and-avoid clearance precautions. Military pilots are also aware of other aircraft during their maneuvers, both visually and through use of cockpit radar displays, to identify and remain well clear of nonparticipating air traffic that may be operating in the MOA. Depending upon terrain and an aircraft's position and use of transponder equipment (electronic beacon), aircraft radar displays are capable of detecting aircraft within 100 miles, including smaller general aviation aircraft. VFR pilots can obtain MOA use status and radar traffic advisories from Hill AFB Clover Control radar while operating through this airspace.

UTTR baseline sortie-operations are approximately 15,941 annually, and support all U.S. military services and numerous allied forces. These sortie-operations are dispersed throughout the major airspace units and their subdivisions including both restricted areas and MOAs. In addition, cruise missile testing and other tests use the UTTR also, accounting for operations over 33 weeks per year.

Air Traffic Control Assigned Airspace

Since a MOA, by definition, only extends up to, but not including, 18,000 feet MSL, an ATCAA is provided by the FAA on an as-needed basis to extend training airspace to higher altitudes in accordance with a letter of agreement. ATCAAs are not designated airspace or charted on aeronautical maps and are only activated for military use when the higher altitudes are needed. The FAA may use that higher airspace for civil IFR overflights when it is not required for military missions.

In accordance with a Letter of Agreement between the FAA and Hill AFB, the Air Force is authorized to use the Currie/Tippet ATCAA (see Figure 3.2-1) on the west side of the UTTR complex. In 2007, aircraft conducted 548 sortie-operations in the Currie/Tippet ATCAA; the 388 FW performed 451 of these sortie-operations. The ATCAA currently supports about 2 sortie-operations per flying day.

Military Training Routes

MTRs are flight corridors for low-level training military aircraft. Training activities associated with MTRs include terrain avoidance, and high-speed, low altitude training, generally below 10,000 feet MSL. Seven MTRs lie within or around UTTR airspace: IR-418, IR-420, VR-1422/1423, and VR-1445/1446, are scheduled by the 388 Range Squadron at Hill AFB; VR-1259 is scheduled by the U.S. Pacific Fleet, Naval Air Station (NAS) Lemoore, CA; IR-234/235, are scheduled by the 412 Operational Support Squadron (OSS), Edwards AFB, CA; and IR-293, 388 RANS/RST, Hill AFB, UT.

Portions of VR-1259, IR-234/235, and IR-293 are located under the Currie/Tippet ATCAA. Segments of IR-234/235 cross the central portion of the area from east to west with a lower altitude limit of the surface. For IR-293, the segments extend southwest to northeast across the area under the ATCAA; the floor altitude along this route is 100 feet AGL. VR-1259 transects the northern edge of the area with segments rated to 200 feet AGL.

These MTRs are often not used in conjunction with UTTR activities and are flown by numerous units and types of aircraft. In 2007, 150 sorties were flown in MTR IR-293 (personal communication, Angus 2008), while only 2 sorties were flown on VR-1259 (personal communication, Tourville 2008). No sorties were flown on IR-234/235 in 2007 (personal communication, Gries 2007).

3.2.2 Civilian Aircraft Operations

The United States implementation of International Civil Aviation Organization (ICAO) airspace classes defines Classes A through E and Class G (Class F is not used in the United States). Each of these is described below and depicted in Figure 3.2-1:

- Class “A” airspace occurs from 18,000 to 60,000 feet MSL. Operations in this airspace must be under IFR and are subject to air traffic control clearance and instructions.
- Class “B” airspace surrounds busy airports such as JFK and Chicago’s O’Hare. Within Class B airspace, pilots must remain clear of clouds and have three miles visibility. Pilots must have ATC clearance and mode C transponders to enter this airspace.
- Class “C” airspace generally surrounds airports with an operating control tower, a radar approach control facility, and a certain number of IFR operations. Pilots must have two-way radio communication and mode C transponders to enter this airspace. The visibility requirement is three statute miles.
- Class “D” airspace generally surrounds airports with an operation control tower. Pilots must have two-way radio communication with the tower to enter the airspace. Visibility must be three statute miles.
- Class “E” airspace is controlled airspace which is not Class A, B, C, or D. The floor of Class E airspace is generally 700 feet AGL. There are areas where Class E airspace begins at either the surface or 700 AGL that are used to transition to/from the terminal or enroute environment (around non-towered airports). These areas are designated by VFR sectional charts. In some areas west of the Mississippi, it starts at 14,500 feet AGL. Class E airspace extends up to 18,000 feet MSL. In most areas of the United States, Class E airspace extends from 1,200 feet AGL up to but not including 18,000 feet MSL, the lower limit of Class A airspace. No ATC clearance or radio communication is required for VFR flight in Class E airspace. VFR visibility requirements are below 10,000 feet MSL – 3 statute miles visibility, and cloud clearance of 500 feet below, 1,000 feet above, and 2,000 horizontal. Above 10,000 feet MSL the requirement is 5 statute miles visibility, and cloud clearance of 1,000 feet below, 1,000 feet above, and 1 mile laterally (FAA 2003). Most airspace in the United States is Class E.
- Class “G” airspace is all uncontrolled airspace and generally underlies Class E airspace. The vertical limits for this airspace are up to 700 feet AGL, 1,200 feet AGL, or 14,500 feet AGL, whichever applies. Cloud clearance and visibility requirements differ by altitude and day versus night.

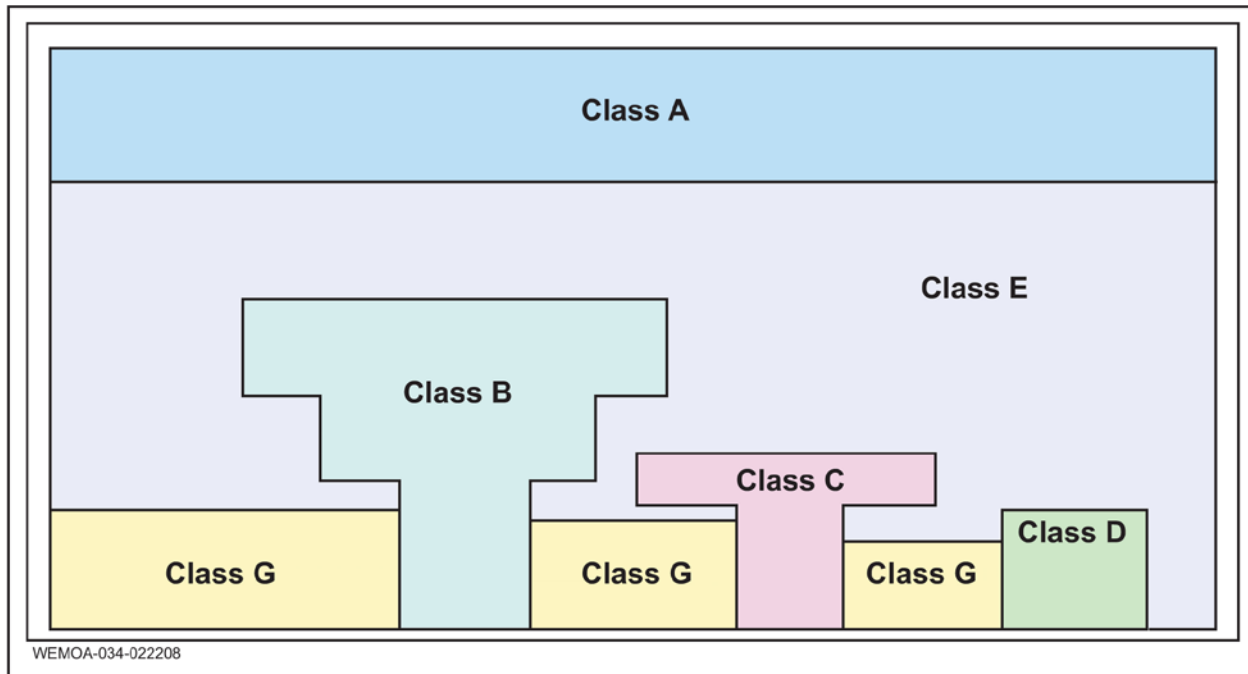


Figure 3.2-1 Schematic of Airspace Classes

Civil and Commercial Aviation Airspace Use

One Victor airway, V269, traverses north under the ATCAA airspace with a minimum enroute altitude of 13,000 feet MSL. Annual traffic counts on this route number about 365, or one per day (personal communication, Harrell 2008).

Commercial aircraft activity in Utah and Nevada has increased recently and is expected to continue to grow over the next 20 years as the population of the states also increases. Most of this present and anticipated growth would occur at the Salt Lake, Ogden, and Las Vegas airports. Commercial operations in Nevada are expected to increase 54 percent, and general aviation activity is expected to grow by about 17 percent by 2015 (NDOT 2005). No airports occur under the airspace, although the area may contain private airstrips used rarely. Ely airport lies about 15 miles south of the Currie/Tippet ATCAA. Elko airport is approximately 50 miles northwest of the ATCAA.

Aircraft operating under VFR between any of the airports in the Ely and Elko areas adjacent to the proposed White Elk MOA airspace may fly through the MOA, using see-and-avoid navigation. 14 CFR Section 91.113(b) provides the regulatory requirement:

When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft. When a rule of this section gives another aircraft the right-of-way, the

pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless well clear.

U.S. Highway 93 is commonly used by VFR pilots as a visual reference or “VFR flyway” when transiting eastern Nevada. Most VFR flights in this region can be conducted directly between these points without being impeded by MOA airspace or military aircraft operations because the floor of the proposed White Elk MOA is 14,000 feet MSL—generally above VFR flyway traffic. Recent improvements and plans for further amenities at the Ely Airport are intended to attract more use for refueling of civil aviation.

Hill AFB operations/airspace representatives provide periodic briefings to civil aviation pilots in the area on military aircraft operations as part of the ongoing Midair Collision Avoidance Program.

Glider Operations

The Great Basin offers excellent soaring opportunities for glider operations with its warm long valleys surrounded by mountainous terrain. Warm air rises out of the valleys above the cooler mountain air creating a convection of thermals ideal for soaring. Soaring pilots gather at Ely and other airports in Nevada and Utah to take advantage of these conditions during the summer months. In the summer of 2005, 25 gliders were observed to operate out of the Ely Airport (personal communication, Williams 2007). The Soaring Society of America reports 89 documented flights from the Ely Airport in 2007 (refer to Appendix B).

Currently, enthusiasts congregate at Ely during the first week of July for “Glider Week.” Hill AFB airspace managers commonly provide a briefing to the glider community on procedures in order to enhance safety (personal communication, Angus 2008).

Gliders prefer to fly in Class “E” airspace. Techniques for seeing and avoiding other aircraft is a required practice, especially when joining, soaring, and ridge soaring. Gliders that are not transponder equipped generally monitor applicable frequencies to allow others to know of their location and intentions while in-flight.

3.3 NOISE

Noise is often defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Response to noise varies by the type and characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day. Noise may be intermittent or continuous, steady or impulsive, and may be generated by stationary or mobile sources. Although aircraft are not the only

source of noise in any area, they are readily identifiable to those affected by their noise emissions and are routinely singled out for special attention and criticism.

There are two kinds of noise discussed in this EIS. The first is conventional subsonic noise, as generated by an aircraft's engines and airframe. This is the most familiar form of aircraft noise, and is heard while an aircraft is within some distance of a receiver. The second type of noise is supersonic. Sonic booms are brief impulsive sounds, which are generated by the aircraft when it flies faster than sound. Assessment of subsonic and supersonic aircraft noise requires a general understanding of the measurement and effects of these two kinds of noise. Appendix F contains additional discussion of noise, the quantities used to describe it, and its effects. Refer to Appendix F for explanations of concepts that are briefly defined in this section. The noise analysis is presented in Appendix G.

Noise represents the most identifiable concern associated with aircraft operations. Although communities and even isolated areas receive more consistent noise from other sources (e.g., cars, trains, construction equipment, stereos, wind), the noise generated by aircraft overflights often receives the greatest attention. General patterns concerning the perception and effect of aircraft noise have been identified, but attitudes of individual people toward noise are subjective and depend on their situation when exposed to noise. Annoyance is the primary consequence of aircraft noise. The subjective impression of noise and the disturbance of activities are believed to contribute significantly to the general annoyance response. A number of factors not related to noise have been identified that may influence the annoyance response of an individual. These factors include both physical and emotional variables.

3.3.1 Aircraft Noise Assessment Methods

An assessment of subsonic and supersonic aircraft noise requires a general understanding of how sound is measured and how it affects people and the natural environment. While Appendix F provides a detailed discussion of noise and its effects on people and the environment, the primary information needed to understand the noise analysis is summarized below.

Noise is represented by a variety of quantities, or "metrics." Each noise metric was developed to account for the type of noise and the nature of what (i.e., receptor) may be exposed to the noise. Human hearing is more sensitive to medium and high frequencies than to low and very high frequencies, so it is common to use "A-weighted" metrics, which account for this sensitivity. Impact of impulsive supersonic noise depends on factors other than human hearing, so that is often quantified by "C-weighted" metrics.

Different time periods also play a role with regard to noise. People hear the sound that occurs at a given time, so it is intuitive to think of the instantaneous noise level, or perhaps the maximum level that occurs during an aircraft flyover. However, the effects of noise over a period of time depends on the total noise

exposure over extended periods, so “cumulative” noise metrics are used to assess the impact of ongoing activities.

Within this EIS, noise is described by the sound level (L), the Sound Exposure Level (SEL), Day-Night Average Sound Level (DNL), and Onset Rate-Adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). A-weighted levels are used for subsonic aircraft noise, and C-weighted levels are used for supersonic aircraft noise (sonic booms) and other impulsive noises. A “C” is included in the symbol to denote when C-weighting is used. Each of these metrics is summarized below and discussed in more detail in Appendix F.

- Sound Level is the amplitude (level) of the sound that occurs at any given time. When an aircraft flies by, the level changes continuously, starting at the ambient (background) level, increasing to a maximum as the aircraft passes closest to the receiver, then decreases to ambient as the aircraft flies into the distance. Sound levels occur on a logarithmic decibel scale; a sound level that is 10 decibels (dB) louder than another will be perceived as twice as loud.
- Sound Exposure Level accounts for both the maximum sound level and the length of time a sound lasts. SEL does not directly represent the sound level heard at any given time, but rather provides a measure of the total sound exposure for an entire event.
- Day-Night Average Sound Level is a noise metric combining the levels and durations of noise events, and the number of events over a 24-hour time period. It is a cumulative average, computed over a given time period like a year, to represent total noise exposure. DNL also accounts for more intrusive nighttime noise, adding a 10-dB penalty for sounds after 10:00 p.m. and before 7:00 a.m. DNL is the measure used to appropriately account for total aircraft noise exposure around airfields.
- Onset Rate Adjusted Monthly Day-Night Average Sound Level is the measure used for subsonic aircraft noise in military airspace. L_{dnmr} accounts for the fact that when military aircraft fly low and fast, the sound can rise from ambient to its maximum very quickly. Known as an onset-rate, this effect can make noise seem louder than its actual level. Penalties of up to 11 dB are added to account for this onset rate.
- C-Weighted Day-Night Average Sound Level (CDNL) is the day-night sound level computed for areas subject to sonic booms. These areas are also subjected to subsonic noise assessed according to L_{dnmr} .

Factors Influencing Annoyance
<i>Physical Variables</i>
<ul style="list-style-type: none"> • Type of neighborhood • Time of day • Season • Predictability of noise • Control over the noise source • Length of time an individual is exposed to a noise
<i>Emotional Variables</i>
<ul style="list-style-type: none"> • Feelings about the necessity or preventability of the noise • Judgment of the importance and value of the activity that is producing the noise • Activity at the time an individual hears the noise (conversation, sleep, recreation) • Attitude about the environment • General sensitivity to noise • Belief about the effect of noise on health • Feeling of fear associated with the noise

3.3.2 Assessing Aircraft Noise Effects

Aircraft noise effects can be described according to two categories: annoyance and human health considerations. Annoyance, which is based on a perception, represents the primary effect associated with aircraft noise. Far less potential exists for effects on human health. Studies of community annoyance to numerous types of environmental noise show that DNL correlates well with effects. Schultz (1978) showed a consistent relationship between noise levels and annoyance. In 1991, a study reaffirmed this relationship (Fidell *et al.* 1991) and in 1994, Finegold updated the form of the curve fit and compared it with the original Schultz curve (Finegold *et al.* 1994). The updated fit, which does not differ substantially from the original, is the current preferred form (see Appendix F).

In general, there is a high correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL. The correlation is lower for the annoyance of individuals. This is not surprising considering the varying personal factors that influence the manner in which individuals react to noise. The inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, findings substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.

In addition to annoyance, other factors that can be used to evaluate a noise environment are noise-induced hearing loss, speech interference, and sleep disturbance. Effects on speech and sleep also contribute to annoyance. A considerable amount of data on hearing loss has been collected and analyzed. It has been well established that continuous exposure to high noise levels (like in a factory) will damage human hearing (USEPA 1972). Hearing loss is generally interpreted as the shifting to a higher sound level of the ear's sensitivity to perceive or hear sound (sound must be louder to be heard). This change can be either temporary or permanent.

Studies on community hearing loss from exposure to aircraft flyovers near airports showed that there is no danger, under normal circumstances, of hearing loss due to aircraft noise (Newman and Bettie 1985). Airport traffic is much more continuous, frequent, and commonly lower in altitude than flights in restricted airspace or MOAs. In this special use airspace, military aircraft fly at varied altitudes, rarely fly over the same point on the ground repeatedly during a short period, and occur sporadically over a day. These factors make it unlikely that an increase in hearing loss would occur under special use airspace (Thompson 1997).

Another nonauditory effect of noise is disruption of conversations. Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. Aircraft noise can also disrupt routine activities, such as radio listening or television watching and telephone use. Due to the sporadic nature of flights within restricted airspace and MOAs, the disruption generally lasts only a few seconds and almost always less than 10 seconds. It is difficult to predict speech intelligibility during an

individual event, such as a flyover, because people automatically raise their voices as background noise increases. A study (Pearsons *et al.* 1977) suggests that people can communicate acceptably in background A-weighted noise levels of 80 dB. The study further indicates that people begin to raise their voices when noise levels exceed 45 dB and some speech interference occurs when background noise levels exceed 65 dB. Typical home insulation reduces the noise levels within the home by 20 dB or more and decreases speech interference (U.S. Department of Housing and Urban Development 1991). However, it is recognized that some aircraft flyovers can momentarily interrupt speech communication.

Noise-related awakenings form another issue associated with aircraft noise. Sleep is not a continuous, uniform condition but a complex series of states through which the brain progresses in a cyclical pattern. Arousal from sleep is a function of a number of factors including age, gender, sleep stage, noise level, frequency of noise occurrences, noise quality, and presleep activity. Quality sleep is recognized as a factor in good health. Although considerable progress has been made in understanding and quantifying noise-induced annoyance in communities, quantitative understanding of noise-induced sleep disturbance is less advanced.

A study of the effects of nighttime noise exposure on the in-home sleep of residents near a military airbase, near a civil airport, and in several households with negligible nighttime aircraft noise exposure, revealed SEL as the best noise metric predicting noise-related awakenings. It also determined that out of 930 subject nights, the average spontaneous (not noise-related) awakenings per night was 2.07 compared to the average number of noise-related awakenings per night of 0.24 (Finegold *et al.* 1994). Additionally, a 1995 analysis of sleep disturbance studies conducted both in the laboratory environment and in the field (in the sleeping quarters of homes) showed that when measuring awakening to noise, a 10-dB increase in SEL was associated with only an 8 percent increase in the probability of awakening in the laboratory studies, but only a 1 percent increase in the field (Pearsons *et al.* 1995). Pearsons also reports that even SEL values as high as 85 dB produced no awakenings or arousals in at least one study. This observation suggests a strong influence of habituation on susceptibility to noise-induced sleep disturbance. A 1984 study (Kryter 1984) indicates that an indoor SEL of 65 dB or lower should awaken less than 5 percent of exposed individuals.

To date, no exact quantitative dose-response relationship exists for noise-related sleep interference; yet, based on studies conducted to date and the USEPA guideline of a 45 dB (DNL) to protect sleep interference, useful ways to assess sleep interference have emerged. If homes are conservatively estimated to have a 20-dB noise alleviation, an average of 65 dB DNL would produce an indoor level of 45 dB DNL and would form a reasonable guideline for evaluating sleep interference. This also corresponds well to the general guideline for assessing speech interference. Annoyance that may result from sleep disturbance is accounted for in the calculation of DNL, which includes the 10-dB penalty for each sortie occurring after 10:00 p.m. or before 7:00 a.m.

The potential for noise to affect physiological health, such as the cardiovascular system, has been speculated; however, no unequivocal evidence exists to support such claims (Harris 1997). Conclusions drawn from a review of health effect studies involving military low-altitude flight noise with its unusually high maximum levels and rapid rise in sound level have shown no increase in cardiovascular disease (Schwartz and Thompson 1993). Additionally, claims about overflight noise producing increased mortality rates and increases in cardiovascular death, adverse effects on the learning ability of middle- and low-altitude students, aggravation of post-traumatic stress syndrome, increased stress, increase in admissions to mental hospitals, and adverse effects on pregnant women and the unborn fetus are similarly unsupported (Harris 1997).

3.3.3 Affected Environment

Federal, state, and local governments regulate noise to prevent noise sources from affecting noise-sensitive areas, such as residences, hospitals, and schools, and to protect human health and welfare. Federal agencies, such as the Department of Housing and Urban Development, have established health-based maximum noise exposure recommendations. Local agencies, including cities and counties, are responsible for defining and enforcing land use compatibility in various noise environments.

Definition of aircraft noise levels in an airspace environment requires two sets of data. The first is a quantitative understanding of aircraft operations: numbers of aircraft, their speeds, altitudes, and locations. The second set of data derives from the physical modeling of the noise itself, which is then accumulated for all aircraft operations. Aircraft operations (defined as sortie-operations) in the overlying Currie/Tippet ATCAA have been described in Chapter 2.

Noise analysis requires data defining aircraft activity in terms of time in the MOA and ATCAA airspace, as well as the speed, altitude, power setting, and position information. One source of data for this information derives from the UTTR airspace manager, who maintains records on the use of UTTR airspace units. Hill AFB and the 388 FW pilots presented operational data on the numbers and types of flights and maneuvers, which were then validated and refined during the data collection process. The noise analysis was performed using the input data on both subsonic and supersonic operations and accepted noise modeling programs, MR_NMAP and BOOMAP 96 sonic boom model (Plotkin 1996, Frampton *et al.* 1993), were used to define noise levels for both baseline and proposed conditions.

Subsonic Noise

Twenty points of interest (towns, recreation areas, American Indian reservations) under or near the proposed MOA and Currie/Tippet ATCAA were selected and noise impacts at each of these locations were modeled (Table 3.3-1, Figure 3.3-1).

Table 3.3-1 Noise Analysis Locations				
<i>Noise Point</i>	<i>Name</i>	<i>Elevation (feet MSL)</i>	<i>Altitude of ATCAA Floor above ground level (AGL)</i>	<i>Altitude of Proposed MOA Floor above ground level (AGL)</i>
<i>Under Existing ATCAA and Proposed MOA</i>				
1	Bassett Lake	6,042	11,958	7,958
2	Currie	5,801	12,199	8,199
3	McGill	6,250	11,750	7,750
4	Steptoe	5,988	12,012	8,012
<i>Under Existing ATCAA</i>				
5	Becky Peak Wilderness	9,993	8,007	4,007
6	Cherry Creek	6,131	11,869	7,869
7	Goshute Canyon Wilderness	7,874	10,126	6,126
8	Goshute Canyon Wilderness Study Area	7,054	10,946	6,946
9	Lages Station	5,971	12,029	8,029
10	Stone House	6,280	11,720	7,720
<i>Outside All Airspace</i>				
11	Ely, NV	6,427	11,573	7,573
12	Goshute Indian Reservation	6,070	11,930	7,930
13	Humboldt National Forest (Green Mountain)	10,680	7,320	3,320
14	Ruby Lake National Wildlife Refuge	5,962	12,038	8,038
15	Schell Creek Range (Cooper Summit)	9,380	8,620	4,620
16	Snow Water Lake	5,590	12,410	8,410
17	South Fork Indian Reservation	6,000	12,000	8,000
18	South Fork State Recreation Area	5,220	12,780	8,780
19	West Wendover, NV	4,255	13,745	9,745
20	Elko, NV	5,070	12,930	8,930

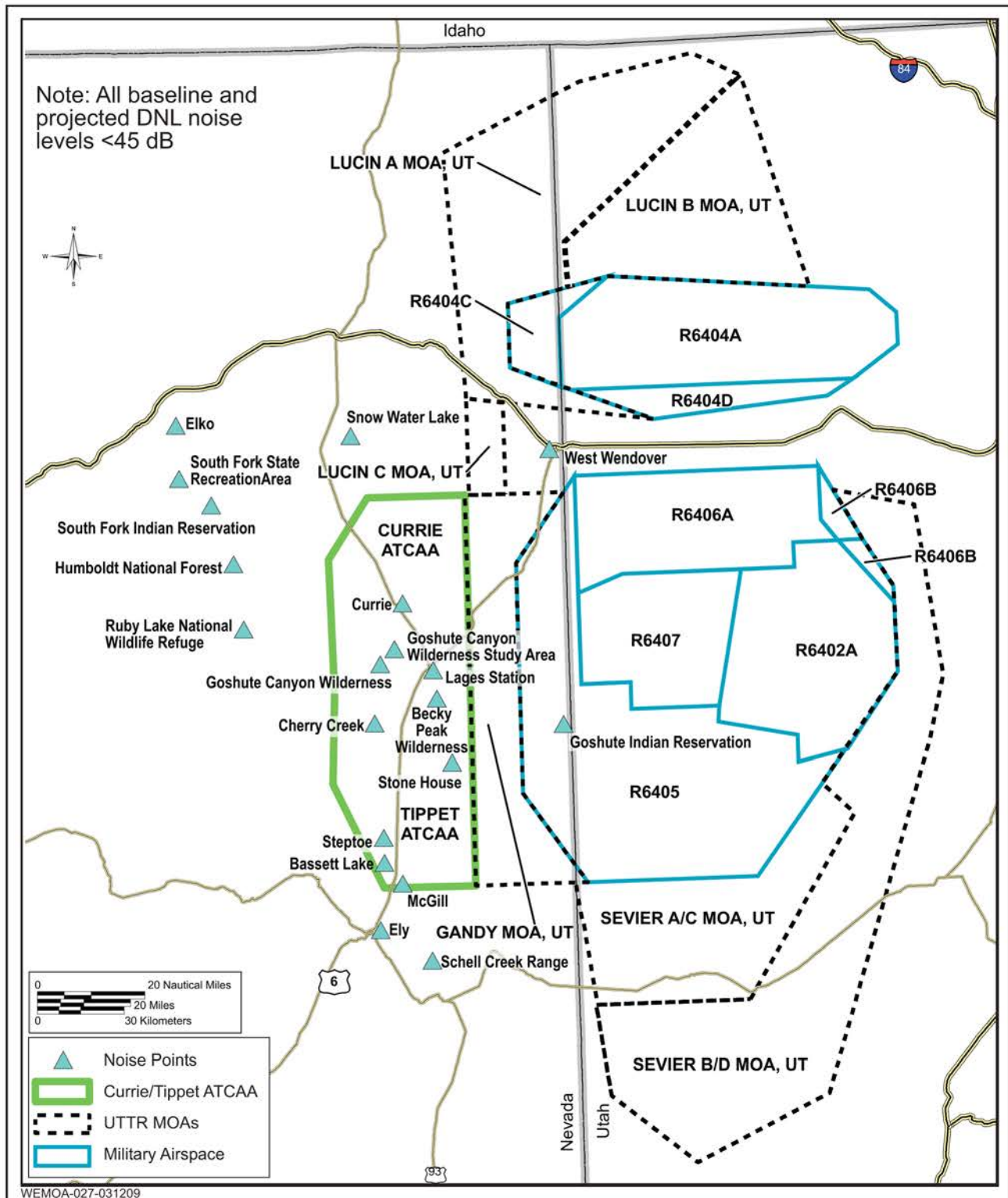


Figure 3.3-1 Noise Analysis Locations and Baseline Subsonic Noise Levels

Within MOAs and restricted airspace, subsonic flight often occurs randomly, or, due to either airspace configuration or training scenarios, it may be concentrated, or channeled, into specific areas or corridors. The Air Force has developed the MR_NMAP (MOA-Route NOISEMAP) computer program (Lucas and Calamia 1996) to calculate subsonic aircraft noise in these areas. MR_NMAP can calculate noise for both random operations and those channeled into MTRs. It is supported by measurements in several military airspaces (Lucas 1995, Frampton *et al.* 1993). There are three MTRs under the proposed MOA; operations on route segments of the MTRs are included in the total noise analysis.

The primary noise metric calculated by MR_NMAP for this assessment is L_{dnmr} . L_{dnmr} has been computed for the airspace potentially affected by the proposed action and no-action alternative. As discussed above and in Appendix F, this cumulative metric represents the most widely accepted method of quantifying noise impact. However, it does not provide an intuitive description of the noise environment. People often desire to know what the loudness of an individual aircraft will be; MR_NMAP and its supporting programs can provide the SEL for individual aircraft at various distances. Table 3.3-2 shows the SEL noise levels for various aircraft at 2,000, 5,000, 10,000, and 20,000 feet AGL.

Table 3.3-2 Representative Sound Exposure Levels (SEL) for Various Aircraft Types and Flight Altitudes						
Aircraft Type	Airspeed	Power Setting	Altitude (Feet AGL)			
			2,000	5,000	10,000	20,000
F-16C	540 knots	99% NC	94	84	74	60
F-15C	520 knots	81% NC	101	91	80	65
F-22A	520 knots	70% ETR	101	89	77	62
A-10	449 knots	6,700 NF	87	75	67	57
FA-18	500 knots	92% NC	101	89	77	62

Notes: NC = Core Engine Fan Speed; RPM = Revolutions Per Minute; ETR = Engine Throttle Ratio; NF = Fan RPM.

Table 3.3-3 presents the baseline noise levels for the locations in Table 3.3-1 and Figure 3.3-1.

Table 3.3-3 Subsonic Noise Calculations for Locations Under or Near the Currie/Tippet ATCAA					
<i>Noise Point</i>	<i>Name</i>	<i>Elevation (feet MSL)</i>	<i>Altitude of ATCAA Floor above ground level (AGL)</i>	<i>Altitude of Proposed MOA Floor above ground level (AGL)</i>	<i>Baseline Noise Levels (L_{dnmr})</i>
<i>Under Existing ATCAA and Proposed MOA</i>					
1	Bassett Lake	6,042	11,958	7,958	<45
2	Currie	5,801	12,199	8,199	<45
3	McGill	6,250	11,750	7,750	<45
4	Step toe	5,988	12,012	8,012	<45
<i>Under Existing ATCAA</i>					
5	Becky Peak Wilderness	9,993	8,007	4,007	<45
6	Cherry Creek	6,131	11,869	7,869	<45
7	Goshute Canyon Wilderness	7,874	10,126	6,126	<45
8	Goshute Canyon Wilderness Study Area	7,054	10,946	6,946	<45
9	Lages Station	5,971	12,029	8,029	<45
10	Stone House	6,280	11,720	7,720	<45
<i>Outside All Airspace</i>					
11	Ely, NV	6,427	11,573	7,573	<45
12	Goshute Indian Reservation	6,070	11,930	7,930	<45
13	Humboldt National Forest (Green Mountain)	10,680	7,320	3,320	<45
14	Ruby Lake National Wildlife Refuge	5,962	12,038	8,038	<45
15	Schell Creek Range (Cooper Summit)	9,380	8,620	4,620	<45
16	Snow Water Lake	5,590	12,410	8,410	<45
17	South Fork Indian Reservation	6,000	12,000	8,000	<45
18	South Fork State Recreation Area	5,220	12,780	8,780	<45
19	West Wendover, NV	4,255	13,745	9,745	<45
20	Elko, NV	5,070	12,930	8,930	<45

Baseline subsonic noise levels for all locations are less than 45 L_{dnmr} (dB). For this analysis, the baseline and projected subsonic noise levels are low, and the areas themselves have low population densities. These low numbers limit precise assessment of community annoyance because the received noise is infrequent. For the current analysis, a lower limit of DNL 45 dB is used for subsonic noise, since this limit corresponds to 1 percent of the population being highly annoyed. Aircraft noise events would be heard more often within the area since the aircraft operations in the airspace would increase. However, the expected community annoyance from subsonic noise would still be less than 1 percent highly annoyed.

Supersonic Noise

Supersonic aircraft flight is primarily associated with air combat training. These activities can occur in specially designated supersonic airspace above 5,000 feet AGL, or in airspace above 30,000 feet MSL. There is currently no designated supersonic airspace in the affected environment and Hill AFB does not fly supersonic above 30,000 feet MSL in the Currie/Tippet ATCAA.

The shape and sound of a sonic boom, resulting from supersonic flight, depends on an aircraft's size, weight, geometry, flight altitude, Mach number (i.e., speed), and maneuvering. When comparing the sonic boom from two aircraft, differences in booms are related to variations in size, weight, and geometry. Aircraft exceeding Mach 1 always create a sonic boom; however, not all supersonic flight activities will cause a boom at the ground. As altitude increases, air temperature decreases, and these layers of temperature change cause booms to be turned upward as they travel toward the ground. Depending on the altitude of the aircraft and the Mach number, many sonic booms are bent upward sufficiently that they never reach the ground. This same phenomenon, referred to as “cutoff,” also acts to limit the width (area covered) of the sonic booms that reach the ground.

When this sonic boom reaches the ground, it is manifested as an overpressure and is sensed as a sonic boom. A sonic boom is characterized as a rapid rise in pressure, followed by a rapid drop-off before the pressure returns to normal atmospheric levels. This change occurs very quickly (i.e., in significantly less than one second). The overpressures created are, in the vast majority of cases, well below those that would begin to cause physical injury or damage to structures. In rare cases, a sonic boom could cause physical damage, as to a window, if the overpressure is of sufficient magnitude. Sonic booms may also cause startle effects in humans and animals.

Sonic booms from air combat training activity have an elliptical pattern. Aircraft will set-up at positions up to 100 nm apart, then proceed toward each other for an engagement. The airspace used tends to be aligned, connecting the setup points in an elliptical shape. Aircraft fly supersonic at various times during an engagement exercise. Supersonic events can occur as the aircraft accelerate toward each other, during dives in the engagement itself, and during disengagement. The long-term average (CDNL) sonic boom patterns also tend to be elliptical.

Long-term sonic boom measurement projects have been conducted in four airspaces: White Sands (Plotkin *et al.* 1989), the eastern portion of the Goldwater range (Plotkin *et al.* 1992), the Elgin MOA at NTTR (Frampton *et al.* 1993), and the western portion of the Goldwater range (Page *et al.* 1994). These seminal studies included analysis of schedule and ACMI data and they supported development of the 1992 BOOMAP model (Plotkin *et al.* 1992). The current version of BOOMAP (Plotkin 1996, Frampton *et al.* 1993) incorporates results from all four studies.

Since supersonic operations are not presently authorized for the Currie/Tippet ATCAA, no supersonic noise calculations were computed for baseline conditions.

3.4 SAFETY

This section addresses ground and flight safety associated with activities conducted by units operating within the proposed White Elk MOA and Currie/Tippet ATCAA. Ground safety includes activities associated with crash response and fire risk and management. Flight safety considers aircraft flight risks such as aircraft mishaps and bird/wildlife-aircraft strikes.

3.4.1 Ground Safety

Crash Response

The 75th Air Base Wing (75 ABW) of Hill AFB maintains detailed mishap response plans and procedures to respond to a wide range of potential incidents. These plans assign agency responsibilities and prescribe functional activities necessary to react to major mishaps, whether on or off base. Response would normally occur in two phases. The initial response considers such factors as rescue, evacuation, fire suppression, safety, and ensuring security of the area, and other actions immediately necessary to prevent loss of life or further property damage. Subsequently, the investigation phase is accomplished. The initial response element consists of those personnel and agencies primarily responsible for beginning the initial phase. This element includes crash rescue personnel, medical personnel, security police, and crash recovery personnel. A subsequent response team is comprised of an array of organizations, whose participation is governed by the circumstances associated with the mishap, and actions required to be performed.

If an aircraft accident occurs on non-federal property, regardless of the agency initially responding to the situation, as soon as the situation is stabilized, an investigation area would normally be established around the accident scene. The site would be secured for the investigation phase. Should the incident take place on Bureau of Land Management (BLM) land, the BLM State Aviation Manager and UTTR Airspace Manager would refer to the Downed Aircraft LOA(s) for guidance (BLM 2007a).

After all required investigations and related actions on the site are complete, the aircraft would be removed. The base civil engineer accomplishes cleanup of the site or contracts to an outside agency to accomplish the cleanup. Overall, the purpose of response planning is to:

- save lives, property, and material by timely and correct response to mishaps;
- quickly and accurately report mishaps to higher headquarters; and
- investigate the mishap to preclude the reoccurrence of the same or a similar mishap.

Fire Risk and Management

The 75 ABW maintains a Wildland Fire Management Plan and also has fire suppression mutual aid agreements with:

- Utah Bureau of Land Management
- Dugway Proving Ground, Utah
- Tooele County/Wendover Airport, Utah
- Wendover City, Utah
- Wendover, Nevada
- Utah Highway Patrol Tooele Sector

The 75 ABW Fire Department averages five mutual aid wildland fire responses to off-base areas annually (Air Force 2007a). In addition, the 75 ABW fire department provides crash response. Under current operations, the unit is fully capable of meeting its requirements; there are no identified equipment shortfalls or limiting factors.

The land area under the proposed MOA/ATCAA airspace is managed by separate BLM field offices as described below. Fire suppression of wildland fires on federal lands is the responsibility of the BLM and is geared toward protecting lives, not the suppression of wildfire.

Ely District Fire Management Plan

Under current management, the short-term goal of the BLM Ely District office is to re-introduce fire with wildland fire use and prescribed fire. The long-term goal is for fire to be re-introduced to the area ecological systems and allowed to function a natural process to the greatest extent possible (BLM 2007b).

The BLM Ely District area is classified into fire management units based on current fuels, distribution, and amounts (Figure 3.4-1). Wildland fire is managed in each unit based on general fire management goals. Some areas have constraints, such as fire size, to conserve wildlife habitat features. Other areas can be managed for wildland fire use (approximately 3.2 million acres) and some are full suppression (726,000 acres in desert tortoise habitat.) Ratings change within the district depending upon new conditions, fuel, vegetation, and other factors (BLM 2007b).

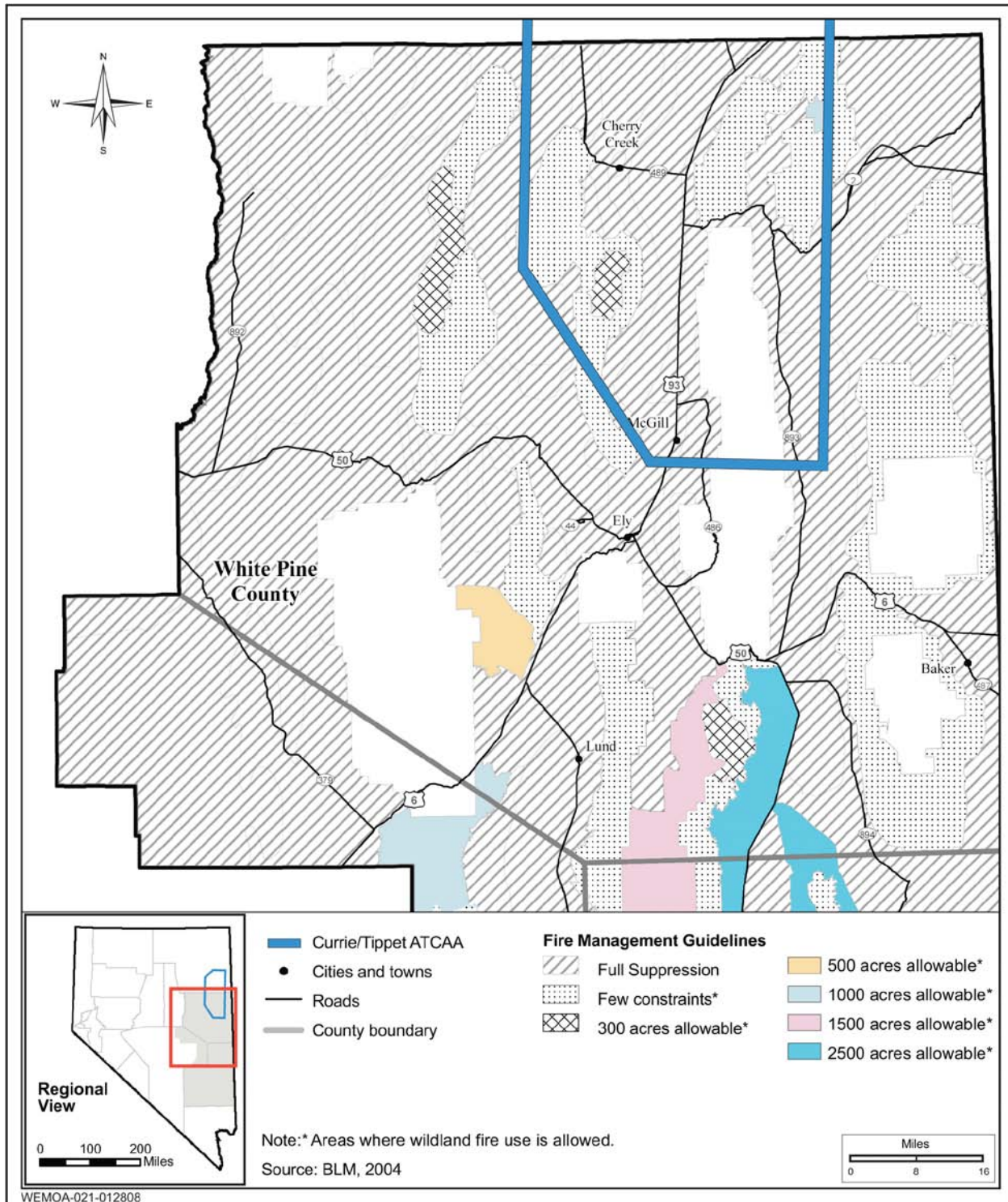


Figure 3.4-1 Ely District Fire Management Units

Elko District Fire Management Plan

The Elko framework and strategy is represented by four fire management categories (FMC) (BLM 2004). It is similar to that defined by the Ely Field Office and employs the same methods and principles. Figure 3.4-2 shows FMC areas under jurisdiction of the Elko field office for this airspace proposal.

- FMC A – Full Suppression. This strategy for maximum suppression activity applies to areas where wildland fire is not desired at all. These include the urban interface, active mining operations, oil and gas fields, recreation sites, critical watersheds, and areas of significant weed infestation. Fuels reduction activities are acceptable, but prescribed fire opportunities will be limited due to the close proximity of structures and improvements.
- FMC B – High Suppression. This category applies to areas where wildfire is likely to cause negative effects, but these effects could be mitigated or avoided through fuels management, prescribed fire, or other strategies. The strategy includes a less strict acreage guideline than FMC A and vegetative treatments to reduce fuel loading as a management technique to a greater degree than FMC A. Areas that provide habitat for federally listed threatened, endangered, or candidate species, suppression tactics will include appropriate standard operating procedures for species protection, except when a threat to human life exists.
- FMC C – Moderate Suppression. This applies to areas where fire may be desirable to manage ecosystems, but where various factors place constraints on fire use for resource benefit. These areas may have larger acreage guidelines than FMC B and can include increased use of vegetation manipulation.
- FMC D—Limited Suppression. This strategy applies to areas where fire is desired under various environmental conditions and there are few constraints associated with resources or social, economic or political considerations. These areas will receive the least level of suppression, some level of fire use for resource benefit and can include the extensive use of prescribed fire.

Chaff and Flares

Chaff

Modern training chaff (RR-188) consists of bundles of extremely small strands of aluminum-coated silica fibers that reflect radio waves from a radar set. Chaff fibers are approximately the thickness of a very thin human hair and range in length from 0.3 to over 1.0 inch (0.76 centimeters to 2.5 centimeters). The length of the chaff determines the frequency range of the radio wave most effectively reflected by that particular filament. This chaff, also known as “angel hair” chaff, is made as small and light as possible so that it will remain in the air long enough to confuse enemy radar. Approximately 5 million chaff strands are dispensed in each bundle of chaff.

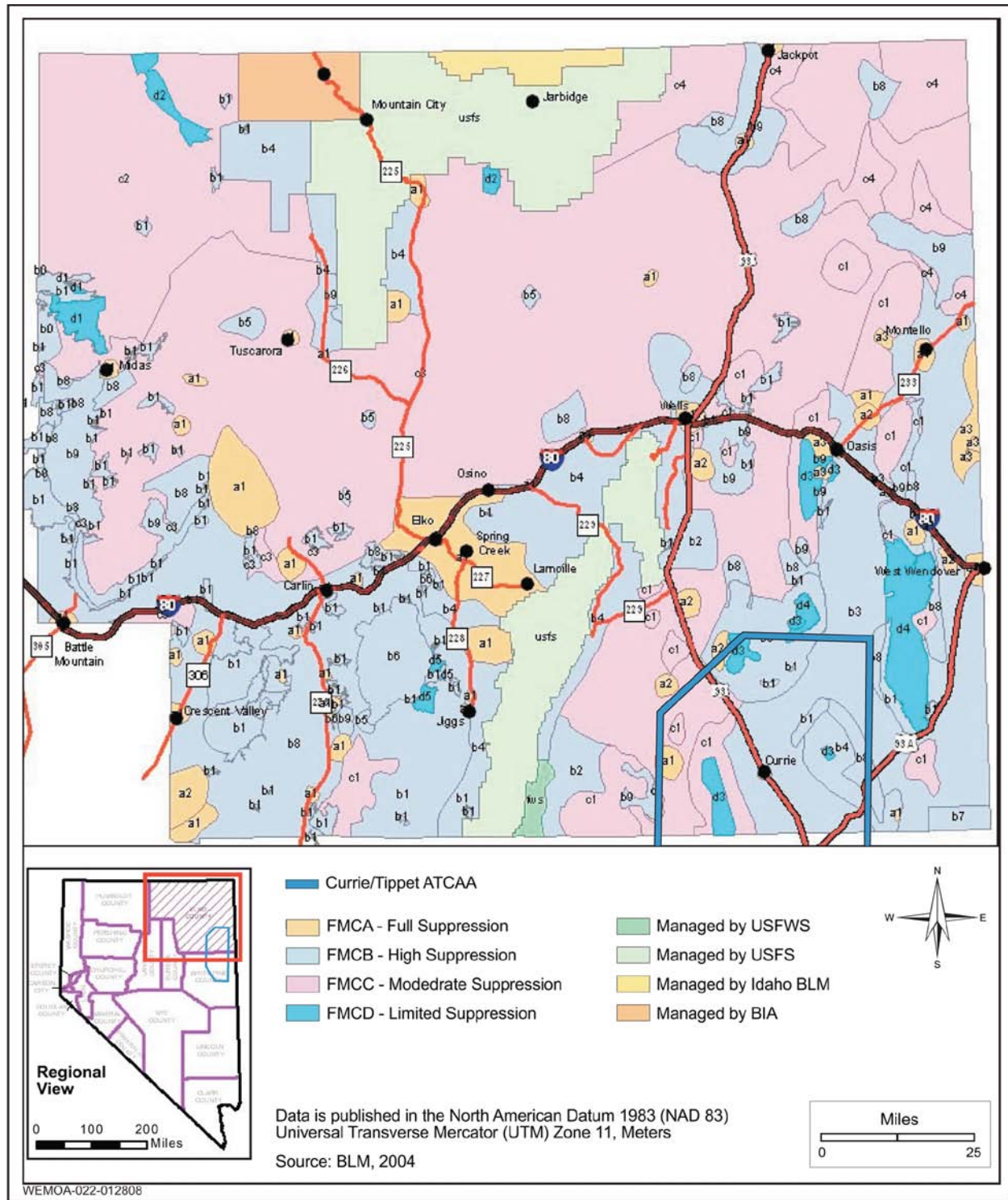


Figure 3.4-2 Elko District Fire Management Units

When released from an aircraft, chaff initially forms a “puff” that disperses widely in the air. Dispersed chaff forms an electronic cloud that effectively reflects radar signals and forms an image on a radar screen. If the pilot quickly maneuvers the aircraft while momentarily obscured or “masked” from precise radar detection by the electronic cloud, the aircraft can safely maneuver to avoid the threat. When multiple chaff bundles are ejected, each forms a similar cloud that further confuses radar-guided weapons.

The primary airspace safety issue related to chaff deployment is the potential to interfere with air traffic control radar. During a 10-year period (1983 to 1993) evaluated for a 1997 analysis, the entire U.S. Air Force experienced only 53 high accident potential (HAP) events associated with chaff systems malfunctions during flight operations involving a variety of aircraft (Air Force 1997). Twenty-nine of the 53 events (approximately 55 percent) occurred in 1985 to 1986. During this timeframe, the Air Force experienced a mechanical problem with a particular type of dispensing system resulting in a high incidence of inadvertent releases. The system was repaired in 1987 and HAP incidents for chaff systems during flight operations occurred at a rate of less than three per year (Air Force 1997). During this same 10-year period, there were no chaff system-related Class A, B, or C mishaps, and only five Class D mishaps and 42 HAP occurrences during non-aircraft related, ground operations (Air Force 1997). In the *Environmental Effects of Self-Protection Chaff and Flares Final Report*, the Air Force determined that potential radar conflicts could be avoided if prior to chaff use, a frequency clearance was obtained from the Air Force Frequency Management Center and Headquarters FAA (Air Force 1997).

Flares

The effective use of flares in combat requires training and frequent use by aircrews to master the timing of deployment, the capabilities of the devices, and to ensure safe and efficient handling by ground crews. Under this proposal, aircrews would use M-206 defensive flares, the same type the F-16s employ on authorized portions of the UTTR.

When threatened by “enemy” radar, pilots must take evasive action to avoid detection and/or attack by adversary air defense systems, including the discharging of pyrotechnic flares. Flares consist of highly flammable material that burns rapidly at extremely high temperatures. Their purpose is to provide a heat source other than the aircraft’s engine exhaust as a target for a threatening heat seeking missile. Day-to-day flare operations and maintenance activities within the proposed White Elk MOA would be performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health (AFOSH) requirements. The handling, processing, and storage of products of these activities are accomplished in accordance with all federal and state requirements applicable to the substance generated.

Flare deployment in authorized airspace is governed by a series of regulations that are based on safety and environmental considerations and limitations. Among these regulations are the following:

- **AFI 13-201** establishes practices to decrease disturbances from flight operations and protect the public from the hazards and effects associated with flight operations.
- **AFI 13-212** outlines procedures governing weapons range use of flares.
- **AFI 11-214** delineates procedures for flare employment.

3.4.2 Flight Safety

Aircraft flight operations in the proposed White Elk MOA and Currie/Tippet ATCAA are governed by standard rules of flight. Additionally, specific procedures applicable to local operations are contained in detailed standard operating procedures that must be followed by all aircrews operating from the installation (Hill AFB Instruction 11-250). The primary public concern with regard to flight safety is the potential for aircraft accidents. Such mishaps may occur as a result of mid-air collisions, collisions with manmade structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird/wildlife-aircraft collisions. Flight risks apply to all aircraft; they are not limited to the military. Flight safety considerations addressed include aircraft mishaps and bird/wildlife-aircraft strikes.

During the scoping period for this EIS several comments were received from the general public regarding potential risks to recreational gliding planes operating in the vicinity of the proposed MOA. Use of chaff and flares and the potential impact on glider activity was another concern raised. The impact analysis (section 4.4) will address these concerns.

Aircraft Mishaps

Aircraft mishaps and their prevention represent a paramount concern of the Air Force. The Air Force defines four categories of aircraft mishaps: Classes A, B, C, and E/High Accident Potential (HAP). Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$1 million, destruction of an aircraft, or damage to an aircraft beyond economical repair. Class B mishaps result in total costs of more than \$200,000, but less than \$1 million, or result in permanent partial disability, but do not result in fatalities. Class C mishaps involve costs of more than \$10,000, but less than \$200,000, or a loss of worker productivity of more than eight hours. Class E/HAP represents minor incidents not meeting any of the criteria for Class A, B, or C. Class C mishaps, the most common types of occurrences, represent relatively unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public. This EIS will focus on Class A mishaps because of their potentially catastrophic results.

Class A mishaps, the most severe, provide an indicator of aircraft safety. Based on historical data on mishaps at all installations, and under all conditions of flight, the military services calculate Class A

mishap rates per 100,000 flying hours for each type of aircraft in the inventory. Combat losses are excluded from these mishap statistics. F-16 aircraft have flown more than 8,674,958 hours since the aircraft entered the Air Force inventory during FY 1985. Over that period, 331 Class A mishaps have occurred. This results in a Class A lifetime mishap rate of 3.82 per 100,000 flight-hours (AFSC 2008a).

F-16 aircraft would be the primary users of the airspace; however, other aircraft would be authorized to operate in the airspace. Table 3.4-1 provides mishap Class A mishap rates for aircraft that would be expected to fly in the proposed White Elk MOA and Currie/Tippet airspace. Using this rate, the estimated years between an F-16 Class A mishap is 139 based on current usage of the Currie/Tippet ATCAA.

Table 3.4-1 Class A Mishap Rates for Specific Aircraft per 100,000 Flight Hours		
<i>Aircraft</i>	<i>Lifetime Mishap Rates</i>	<i>Cumulative Hours Flown</i>
A-10	2.21	4,572,177
F-15	2.42	5,495,666
F-16	3.82	8,674,958
F-22A ¹	N/A	30,878
FA-18	3.09	5,758,090

Notes: ¹F-22A has not yet flown 100,000 hours.

Source: AFSC 2008a; NSC 2008.

It is impossible to predict the precise location of an aircraft accident. Major considerations in any accident are loss of life and damage to property. The aircrew's ability to exit from a malfunctioning aircraft is dependent on the type of malfunction encountered. The probability of an aircraft crashing into a populated area is extremely low, but it cannot be totally discounted. Several factors are relevant: the region of influence and immediate surrounding areas have relatively low population densities; pilots of aircraft are instructed to avoid direct overflight of population centers at very low altitudes; and, finally, the limited amount of time the aircraft is over any specific geographic area limits the probability that impact of a disabled aircraft in a populated area would occur.

Secondary effects of an aircraft crash include the potential for fire and environmental contamination. To minimize midair collision risks within special use airspace, the 388 FW has an Interagency Airspace Coordination LOA with BLM Nevada and BLM Utah which provides procedures to coordinate fire and non-fire operations by all aircraft operating in UTTR airspace (BLM and UTTR 2007). The LOA applies to subordinate units of the 388 FW, including all schedulers, controllers, and users of the airspace, and state and district offices of BLM located in Elko, Ely, Cedar City, Fillmore, Richfield, and Salt Lake City.

The extent of secondary effects is situationally dependent, and is therefore difficult to quantify. The regional terrain that would be overflowed under this proposal is diverse. For example, should a mishap occur, highly vegetated areas during a hot, dry summer would have a higher risk of experiencing extensive fires than would more barren and rocky areas during winter. When an aircraft crashes, it may

release hydrocarbons. Those petroleum, oils, and lubricants not consumed in a fire could contaminate soil and water. The potential for contamination is dependent on several factors. The porosity of the surface soils will determine how rapidly contaminants are absorbed. The specific geologic structure in the region will determine the extent and direction of the contamination plume. The locations and characteristics of surface and groundwater in the area will also affect the extent of contamination to those resources.

Should a mishap occur, response and recovery operations could necessitate such activities as the use of motorized vehicles and excavation to contain contamination. This type of activity is normally prohibited in wilderness areas. When responding to a crash site, the Air Force would consult with the appropriate land use manager to minimize direct damage and coordinate actions. Due to the myriad factors in such an occurrence, detailed steps cannot be foreseen; however, each crash response would be considered on a case-by-case basis to ensure minimizing resultant evidence of intrusiveness to the maximum extent practicable, consistent with national security considerations and the need to protect life and property from further risk.

F-16 aircraft carry 6.8 gallons of hydrazine in a sealed, stainless steel tank that is designed to withstand crash impact damage. There are no recorded statistics, but investigators responding to F-16 crashes from Hill AFB have never witnessed a ruptured canister (personal communication, Traylor 2008.) Hydrazine is a highly volatile propellant that contains toxic elements. It is carried on the F-16 as part of the emergency power unit system, and when activated, the flow of hydrazine lasts approximately 15 minutes. When used for this purpose, hydrazine is completely consumed, and poses no safety hazard. In any crash that is severe enough to rupture the canister, it is most likely that fire will also be involved. In this case, the hydrazine will also burn and be completely decomposed. In the unlikely event that the hydrazine should be released, but not consumed by fire, impacts on soils and groundwater are likely to be of minor consequence. Hydrazine absorbs water at room temperature. It is incombustible in solution with water at concentrations of 40 percent or less, and it evaporates at any given temperature at a rate slightly slower than water evaporation.

Movement of hydrazine through natural soils has been shown to be slow and limited. Due to its absorption and natural decomposition processes, the probability of released hydrazine significantly contaminating groundwater is considered extremely low. However, if quantities of hydrazine were to reach a surface water body, aquatic life in those areas experiencing high concentrations could be significantly impacted.

Bird/Wildlife-Aircraft Strike Hazard

Bird/wildlife-aircraft strike hazard (BASH) constitute a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations if an aircraft crash should occur in a populated area. Aircraft may encounter birds at altitudes of 30,000 feet above MSL or higher. Over 95

percent of reported bird strikes occur below 3,000 feet AGL. Approximately 50 percent of bird strikes happen in the airport environment, and 25 percent occur during low-altitude flight training (Worldwide BASH Conference 1990).

Migratory waterfowl (e.g., ducks, geese, and swans) are hazardous to low-flying aircraft because of their size and their propensity for migrating in large flocks at a variety of elevations and times of day. Waterfowl vary considerably in size, from 1 to 2 pounds for ducks, 5 to 8 pounds for geese, and up to 20 pounds for most swans. There are two normal migratory seasons, fall and spring. Waterfowl are usually only a hazard during migratory seasons. These birds typically migrate at night and generally fly between 1,500 to 3,000 feet AGL during the fall migration and from 1,000 to 3,000 feet AGL during the spring migration. The potential for BASH strikes is greatest in areas used as migration corridors (flyways) or where birds congregate for foraging or resting (e.g., open water bodies, rivers, and wetlands).

Along with waterfowl, raptors, shorebirds, gulls, herons, and songbirds also pose a hazard. In considering severity, the results of bird-aircraft strikes on MTRs and in restricted areas show that strikes involving raptors result in the majority of Class A and B mishaps, which are few in number. Raptors of greatest concern are vultures and red-tailed hawks. Peak migration periods for raptors, especially eagles, are from October to mid-December and from mid-January to the beginning of March. In general, flights above 1,500 feet AGL would be above most migrating and wintering raptors.

Songbirds are small birds, usually less than one pound. During nocturnal migration periods, they navigate along major rivers, typically between 500 to 3,000 feet AGL.

While any bird/wildlife-aircraft strike has the potential to be serious, many result in little or no damage to the aircraft, and only a minute portion result in a Class A mishap. During the years from March 1985 to January 2008, the Air Force BASH Team documented 77,645 bird strikes. Of these, 41 resulted in Class A mishaps. These occurrences constituted approximately 0.05 percent of all reported bird/wildlife-aircraft strikes. During the same period of years, Hill AFB documented 9 bird strikes; all were Class C mishaps (AFSC 2008b). All activity in the Currie/Tippet ATCAA occurs well above 3,000 feet AGL (at least 7,300 feet AGL), so the potential for strikes remains negligible.

3.5 LAND USE, RECREATION, AND VISUAL

Land use generally refers to human modification of the land, often for residential or economic purposes. It also refers to use of land for preservation or protection of natural resources such as wildlife habitat, vegetation, or unique features. Human land uses include residential, commercial, industrial, agricultural, or recreational uses; natural features are protected under designations such as national parks, national forests, wilderness areas, or other designated areas. The attributes of land use include general land use and ownership, land management plans, and special land use management areas. Land ownership is a

categorization of land according to type of owner; the major land ownership categories include federal, state, and private. Underlying the proposed White Elk MOA, federal lands are further designated by the particular agency tasked with managing the land such as BLM and the United States Forest Service (USFS). Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of uses that are allowable or protect specially designated or environmentally sensitive uses. Special land use management areas are identified by agencies as being worthy of more rigorous management.

3.5.1 Land Use

Most of the land under this airspace proposal consists of federal lands managed by the BLM. The ATCAA and proposed MOA encompass airspace over lands within the BLM Ely and Elko Districts in Nevada. A small portion of the MOA would overlie the Humboldt-Toiyabe National Forest managed by the USFS. Private lands comprise the remaining area under the affected airspace. Table 3.5-1 lists the land status and the acreage.

Table 3.5-1 Land Status under the Proposed White Elk MOA and Currie/Tippet ATCAA in Acres		
<i>Management</i>	<i>MOA¹</i>	<i>ATCAA</i>
BLM	1,276,443	1,407,609
USFS	85,997	130,763
Bureau of Indian Affairs (BIA)	1,830	2,483
Private	54,478	85,251

Note: ¹ All lands under the MOA also underlie the ATCAA so acreages are not additive.

Figure 3.5-1 shows the land status by agency, major rights-of-way, wilderness and wilderness study areas (WSA), roads, and towns located under the proposed airspace action.

Bureau of Land Management

Federal Land Policy and Management Act (FLPMA) requires each field office or station to develop and manage lands by use of a Resource Management Plan (RMP). Currently, the management of these lands in Elko County is guided by the approved *Wells Resource Management Plan and Environmental Impact Statement*, which established guidelines for the classification of lands for multiple uses, including agriculture, residential, commercial, industrial, recreation, and public purposes (BLM 1985). Public lands in White Pine County are managed by the *Schell Management Framework Plan*, and the *Egan Resource Management Plan*. In 2004, the Ely field Office began a revision of the *Caliente Management Framework Plan*, the *Schell Management Framework Plan*, and the *Egan Resource Management Plan* to combine the documents guiding the management of resources throughout the planning area for their field office into one document.

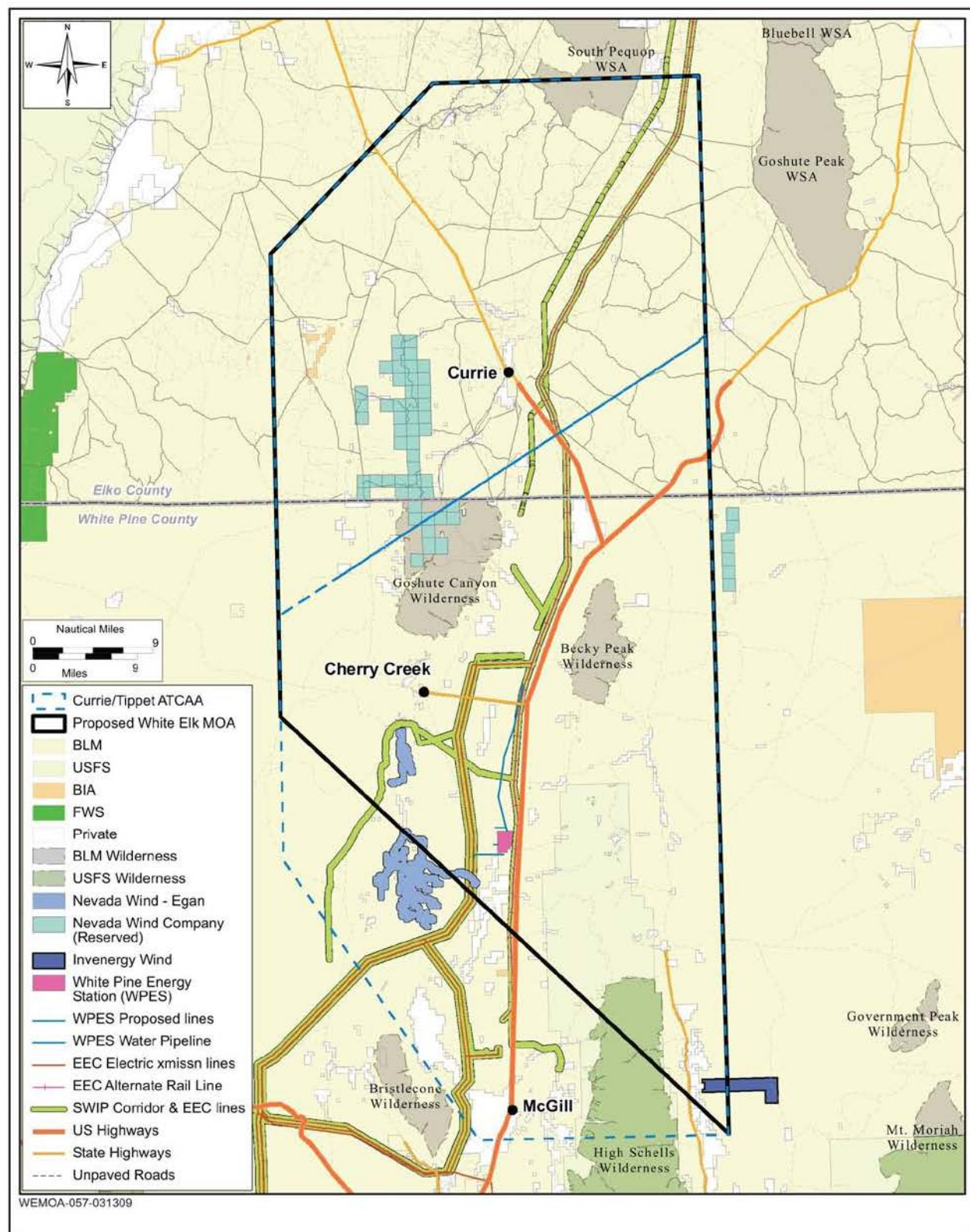


Figure 3.5-1 Land Status and Ownership

The *Ely Proposed Resource Management Plan/Final Environmental Impact Statement for the Ely Field Office, Nevada* was issued in November 2007. The proposed plan would balance the need for ecological restoration, enhancement, and preservation with the public's desire for food, fiber, mineral and services on public lands. Management of the lands would focus on the sustainability of the ecosystem and provide the public products and services as the land will allow (BLM 2007b).

United States Forest Service

The USFS manages land in the Schell Creek Range under the proposed MOA. The USFS implements Forest Plans to guide the management of resources on Forest Service lands. The *Humboldt National Forest Land and Resource Management Plan* (USFS 1986) was prepared to manage the Humboldt National Forest. A revision to the Humboldt-Toiyabe Forest Plan is underway but is waiting for the USFS to issue a new Planning Rule. Once the Planning Rule is issued, expected in early 2008, a draft plan will be issued by late 2008 with the NEPA to follow (personal communication, Hampton, 2008). Like the BLM, the USFS manages land in a manner which balances the ecological needs with the public's need to utilize the forest resources.

Bureau of Indian Affairs

The main portion of the South Fork Indian Reservation is located about twenty miles south of Elko. The reservation also has a small area in the Butte Valley comprised of 1,830 acres. There are only a couple of people living in this portion of the reservation (personal communication, Thompson 2007).

Private

Private lands comprise 85,251 acres under the Currie/Tippet ATCAA. Ranching and grazing are the primary uses under the airspace, but there are some residences and industrial properties, particularly in Steptoe Valley. Urban interface is the transition area between urban areas and rural and/or wildland areas. The White Pine County Economic Development Authority expects the Urban Interface to grow into the Steptoe Valley as much as 20 miles north of McGill (personal communication, Rajala 2007). The towns of McGill, Cherry Creek, Lages Station and Currie lie under the proposed MOA and ATCAA airspace. An additional 15 to 20 ranching residences are spread out under the airspace. McGill houses the most population by far with 1,051 persons (USCB 2008a). Population estimates for Currie and Cherry Creek are approximately 20 people each with an additional 20 persons distributed among the ranches.

The White Pine County Conservation of Public Land and Natural Resources Act of 2007 also included lands slated for disposal by the BLM. These lands would be sold to the private sector. Some of the lands slated for disposal are in the Steptoe Valley under the proposed MOA and ATCAA airspace. In addition

to the disposed lands, the BLM issues rights-of-way to other agencies, state and local governments, and the private sector for developments such as power generation and transmissions, communication sites, and other uses. Under the airspace, there are numerous rights-of way including two power plants in Steptoe Valley and wind farms in the Egan Range.

Wilderness and Wilderness Study Areas

Inclusion of land into the National Wilderness Preservation System is intended to preserve areas in a primitive state that possess little evidence of human activity. The Wilderness Act of 1964 identified criteria for evaluating areas for wilderness characteristics and gave direction on how designated wilderness areas should be managed. Subject to certain exemptions, use of motor vehicles or other motorized equipment, landing of aircraft, and construction of structures and roads are prohibited in wilderness areas. Each federal agency is responsible for evaluating, nominating, managing, and protecting designated and potential wilderness areas within the lands they manage.

The BLM, in accordance with Section 603(c) of the FLPMA, reports to Congress on the federal lands under its management suitable for inclusion in the National Wilderness Preservation System. To accomplish this task, BLM inventoried and evaluated federal lands under its jurisdiction to determine areas suitable for wilderness designation. The result of the land inventory was the identification of a number of WSAs. The major factors evaluated for each WSA include wilderness qualities such as naturalness, size, solitude, and special features; additional wilderness quality factors include multiple resource benefits, balancing the geographic distribution of wilderness areas, diversity of natural systems, and manageability. BLM submitted recommendations for designation of these lands to the Secretary of the Interior for congressional action. A collaborative process for lands legislation was initiated to convert the WSAs into wilderness areas. The legislation also called for land disposals by the BLM and transfers of land to the local and state governments. Bristlecone Wilderness was not a WSA prior to the legislation but was deemed to exhibit sufficient wilderness qualities to include it in the Act. Additionally, the High Schells Wilderness managed by the USFS was included in the Act. In 2006, Congress passed the *White Pine County Conservation of Public Land and Natural Resources Act of 2007* which designated 558,000 acres of wilderness of which 103,620 acres lie under the Currie/Tippet ATCAA. In Elko County, one WSA exists under the proposed White Elk MOA and Currie/Tippet ATCAA. Table 3.5-2 lists the wilderness areas and WSAs and the acreage under this airspace proposal. A portion of the Goshute Canyon WSA in Elko County was part of the Ely District Goshute Canyon WSA prior to enactment of the White Pine County Conservation, Recreation, and Development Act of 2006. Wilderness designation was not applied to this portion of the WSA.

Table 3.5-2 Wilderness Areas and WSAs Underlying the Proposed White Elk MOA and Currie/Tippet ATCAA in Acres		
Wilderness Area	MOA	ATCAA
Becky Peak Wilderness (BLM Ely District) ¹	18,119	18,119
Goshute Canyon Wilderness (BLM Ely District) ¹	42,544	42,544
High Schells Wilderness (USFS District) ¹	14,500	43,043
South Pequop WSA (BLM Elko District)	11,700	11,700

Source: ¹White Pine County Conservation, Recreation, and Development Act of 2006.

3.5.2 Recreation and Visual Resources

Recreation

Recreation resources include primarily outdoor recreational activities that occur away from a participant's residence. This section addresses natural resources and man-made facilities that are designated or available for public recreational use in both urban and rural areas. The setting, activity, and other resources that influence affected recreation resources are also considered.

The affected environment for recreation consists of lands under the subject airspace. The analysis examined the effects of noise on recreation use at recreation areas. Potential recreation opportunities and sites were determined through information from the BLM and USFS. Most of the land beneath the subject airspace that is open to public recreation is managed by the BLM for multiple use, which includes recreation.

Numerous broad valleys separate the north-south trending mountain ranges throughout the area. The diverse landscape provides a variety of outdoor recreation opportunities ranging from hiking, camping, and nature viewing to off-road vehicle use, mining and rock-hounding, hunting and fishing. Elko and White Pine Counties are popular destinations for outdoor recreation used by visitors throughout the western United States. Aviation related recreation, such as gliding and ultra-light aircraft, is also popular in the region. For more information regarding aviation usage of the region, please refer to Chapters 3.2 and 4.2, *Airspace and Aircraft Operations*.

Bighorn sheep, elk, mule deer, antelope, and upland game (grouse, chukar, quail, pheasant, dove, rabbits, etc.) are hunted throughout the area. The Schell Creek Range is particularly popular for hunters for elk and mule deer on both the BLM and USFS lands. Year-round habitat for elk exists in the Schell Creek Range. The Elko District BLM manages for elk in the Cherry Creek and the Spruce/Pequops (BLM 1995a).

Dispersed camping and hiking occur under the airspace. There are a few developed campsites in the Schell Creek Range and near Goshute Creek. Primitive sites are abundant throughout the area. The High Schells Wilderness Area is popular for hikers to visit and is the most popular and accessible Wilderness

Area under the proposed airspace (personal communication, Irwin, 2008). Numerous creeks in the Schell Creek range and Goshute Creek and other areas provide fishing opportunities for the angler visiting the area. The South Pequop WSA located under the Currie/Tippet ATCAA and Goshute Peak and Bluebell WSAs located east of the ATCAA provide hiking, backpacking, and camping opportunities with primitive settings throughout. Each of these WSAs currently experience low-level military overflights (BLM 2009).

Visual Resources

Visual resources include those areas or viewsheds seen by an observer in the area. Since the BLM administers most (about 86 percent) of the lands under the ATCAA, the BLM visual classification is used herein. There are four classes of Visual Resource Management (VRM) used by the BLM. The following lists the management objectives for each VRM class (BLM Manual 8431 - Visual Resource Contrast Rating, no date).

- **Class I:** The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **Class II:** The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **Class III:** The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **Class IV:** The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

In addition to the management objectives, degree of contrast is used to determine how an action may fit into the current visual landscape. Table 3.5-3 describes the criteria used for degree of contrast.

Table 3.5-3 Visual Resource Management Degree of Contrast Criteria	
<i>Degree of Contrast</i>	<i>Criteria</i>
None	The element contrast is not visible or perceived.
Weak	The element contrast can be seen but does not attract attention.
Moderate	The element contrast begins to attract attention and begins to dominate the characteristic landscape.
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

Most of the lands under the proposed airspace that are classified by the BLM for VRM are Class I and Class II. The Humboldt Forest Plan does not specify the VRM classes, but it is probable that the areas would be classified as predominately Class I with some Class II. Private lands are typically not classified for VRM.

3.6 BIOLOGICAL RESOURCES

Biological resources are defined as all native and non-native plant and animal species and the habitats where they are found, and the communities they form. Plant species are often referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the area or environment where the resources and conditions are present that cause or allow a plant or animal to live there (Hall *et al.* 1997). Biological resources for this EIS include vegetation, wildlife, special-status species, and wetlands occurring in the vicinity of the proposed White Elk MOA and Currie/Tippet ATCAA where they could be potentially affected by noise generated from supersonic activity and use of chaff and flares. All baseline data were gathered from previous studies and national and state natural resources databases.

3.6.1 Vegetation

Vegetation includes all existing upland terrestrial plant communities with the exception of wetlands or special-status species. The lands under the proposed White Elk MOA and overlying Currie/Tippet ATCAA lie within the Northeastern Great Basin. The Great Basin is distinguished by the presence of distinctive native shrub communities, dominated by the different varieties and species of sagebrush such as black sagebrush (*Artemisia nova*), Wyoming big (*Artemisia tridentata ssp. wyomingensis*), mountain big (*Artemisia tridentata ssp. vaseyana*), and big sagebrush (*Artemisia tridentata*). Native perennial bunchgrasses such as bluebunch wheatgrass (*Pseudoroegneria spicata*), bottlebrush squirreltail (*Elymus elymoides*), Indian ricegrass (*Oryzopsis hymenoides*), and Great Basin wildrye (*Elymus cinereus*) have been replaced by invasive annual species such as cheatgrass (*Bromus tectorum*). These vegetation communities are products of the various natural and human-related disturbances and environmental factors occurring during the past 200 years in which livestock grazing has increased and the frequency of fires has decreased (Tausch *et al.* 1993).

Aspen, Pinyon-juniper, and mountain mahogany woodlands are also found. Single leaf pinyon (*Pinus monophylla*) and/or Utah juniper (*Juniperus osteosperma*) dominate the Pinyon-juniper woodlands. Aspen plant communities generally occur as small stands in isolated pockets mainly on northern and eastern slopes at higher elevations on the mountains (BLM 2007b).

3.6.2 Wildlife

For the purposes of this EIS, wildlife includes all vertebrate animals (i.e., mammals, birds, amphibians, and fish) with the exception of those identified as threatened, endangered, or special-status species. Wildlife potentially affected by overflight noise will be discussed.

Wildlife in the Great Basin includes species that are primarily associated with Great Basin (BLM 2007b) montane scrub and pinyon-juniper woodland and occur or are likely to occur under the proposed airspace. The larger mammal species include Rocky Mountain elk, pronghorn antelope (*Antilocapra americana*), and bighorn sheep (*Ovis Canadensis*). At higher elevations, small springs and seeps provide limited watering facilities for domestic livestock (cow, sheep and lambs, horses and ponies). In addition, the rougher, more densely vegetated regions in the higher elevations also support mountain lion (*Puma concolor*), bobcat (*Felis rufus*), mountain goat (*Oreamnos americanus*), and mule deer (*Odocoileus Hemionus*) populations. Beaver, muskrat, coyote, red fox, gray fox, and kit fox can also be found. The small mammal species include the pygmy rabbit (*Brachylagus idahoensis*), cottontail rabbit, and a variety of shrews, bats, ground squirrels, woodrats, and mice (BLM 2007b). Typical reptile species include the Great Basin rattlesnake (*Crotalus viridis lotus*), western fence lizard (*Sceloporous occidentalis*), and the greater and pygmy short-horned lizards (NDOW 2008).

Wild horses and burros may be found on the lands under the proposed airspace. Efforts have been implemented to remove wild horses from private lands and return them to one of four herd management areas in Elko County (BLM 1993) and two in White Pine County (BLM 2007b). Wild horses and burros are protected by PL 92-195, the Wild Free-Roaming Horse and Burro Act of 1971, as amended.

Birds typical of the northeastern Nevada region include quail, hummingbirds, and woodpeckers. Species include the greater sage-grouse (*Centrocercus urophasianus*), great horned owl (*Bubo virginianus*), and belted kingfisher (*Megaceryle alcyon*). The Eurasian collared dove (*Streptopelia decaocto*) is a new species in the state. Waterfowl found in the region include mallard, green-winged teal, Canada geese, and a variety of diving ducks (BLM 2007b).

Large raptor populations migrate late summer to early fall along the Goshute Mountain Range at about 9,000 feet elevation (HWI 2007). Raptors regularly observed in the region include red-shouldered hawk (*Buteo lineatus*), ferruginous hawk (*Buteo regalis*), Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), American kestrel (*Falco sparverius*), and

peregrine falcon (*Falco peregrines*) (HWI 2007). Common waterfowl include mallard, green-winged teal, Canada geese, and a variety of diving ducks (BLM 2007b).

Aquatic habitat found under the airspace support both game and native nongame species for at least a portion of the year. Cold water trout species include rainbow, German brown, brook, rainbow cutthroat hybrid, and Bonneville cutthroat (BLM 2007b). Warm water game fish include largemouth bass and northern pike (BLM 2007b, White Pine County 2006). Native nongame species include sucker, minnow, and killifish.

3.6.3 Special-Status Species

Special-status species are defined as those plant and animal species listed as threatened, endangered, or proposed as such by the United States Fish and Wildlife Service (USFWS). The federal Endangered Species Act (ESA) protects federally listed, threatened, and endangered plant and animal species. Species of concern are not protected by the ESA; however, these species could become listed and protected at any time. Their consideration early in the planning process could avoid future conflicts that might otherwise occur. The discussion of special-status species focuses on those species with the potential to be affected by implementation of this proposed action.

There are 36 state- or federally-listed plant and animal species of concern occurring in Nevada (USFWS 2008a, 2008b); however none are located in the lands underlying the proposed MOA or Currie/Tippet ATCAA. Appendix H provides the list of all special-status plant and animal species in Nevada.

The bald eagle was listed as federally threatened in 1995 but was delisted on July 9, 2007 (72 *Federal Register* 37346-37372). The bald eagle has been observed in the Goshute Mountain Range during periods of migration but is not considered a resident as no nests are known to exist in the area potentially affected by this airspace proposal.

The USFWS petitioned to list the pygmy rabbit as threatened or endangered under the ESA. The petition was published in the *Federal Register* on January 8, 2008 (73 *Federal Register* 1312). Pygmy rabbits are typically found in areas of tall, dense sagebrush cover, and are highly dependent on sagebrush to provide both food and shelter throughout the year. Their diet in the winter consists of up to 99 percent sagebrush. Pygmy rabbit burrows are typically found in relatively deep, loose soils of wind-borne or water-born origin. They occasionally make use of burrows abandoned by other species and as a result, may occur in areas of shallower or more compact soils that support sufficient shrub



cover. The historical range of the pygmy rabbit includes portions of California, Oregon, Nevada, Idaho, Montana, Wyoming, Utah, and Washington (USFWS 2008c).

The USFWS petitioned to have the greater sage grouse federally listed in 2006; however, they determined that the protection under the ESA was not warranted (70 *Federal Register* 2244). Bald eagles, once endangered, are no longer listed under the federal ESA, but they remain protected under the federal Bald and Golden Eagle Protection Act.

3.6.4 Wetlands and Jurisdictional Waters of the United States

Wetlands and jurisdictional waters of the U.S. are considered special category sensitive habitats and are subject to regulatory authority under Section 404 of the Clean Water Act and Executive Order 11990 *Protection of Wetlands*. They include jurisdictional and non-jurisdictional wetlands. Jurisdictional wetlands are those defined by the United States Army Corps of Engineers (USACE) and USEPA as those areas that meet all the criteria defined in the USACE's 1987 *Wetlands Delineation Manual* and under the jurisdiction of the USACE (USACE 1987). Wetlands are generally associated with drainages, stream channels, and water discharge areas (natural and man-made).

Numerous streams and creeks exist under the Currie/Tippet ATCAA and proposed MOA; however, according to the National Wetland Inventory data, no known wetlands or jurisdictional waters of the U.S. occur within the affected environment (USFWS 2008d).

3.7 CULTURAL RESOURCES

3.7.1 Definition of Cultural Resources

Cultural resources are prehistoric and historic sites, buildings, districts, or objects that are important to a culture or community. Cultural resources are generally divided into three categories: archaeological resources, architectural resources, and traditional cultural resources.

Archaeological resources occur in places where people altered the ground surface or left artifacts or other physical remains (e.g., arrowheads, glass bottles, pottery). Archaeological resources can be classified as either sites or isolates. Isolates generally cover a small area and often contain only one or two artifacts, while sites are usually larger in size, contain more artifacts, and sometimes contain features or structures. Archaeological resources can be either prehistoric or historic.

Architectural resources are standing buildings, dams, canals, bridges, windmills, oil wells, and other such structures. They are generally historic in affiliation.

Traditional cultural resources are resources associated with the cultural practices or beliefs of a living community that link the community to its past and help maintain its cultural identity. Most traditional cultural resources in Nevada, Utah, and the surrounding areas are associated with American Indians. Traditional cultural resources can include archaeological resources, locations of prehistoric or historic events, sacred areas, sources of raw materials used in the manufacture of tools and/or sacred objects, certain plants, or traditional hunting and gathering areas.

Under the National Historic Preservation Act (NHPA) and various federal regulations, only significant cultural resources are considered when assessing the possible impacts of a federal undertaking or action. Significant archaeological, architectural, and traditional cultural resources include those that are eligible or recommended eligible for inclusion on the National Register of Historic Places (National Register). The significance of archaeological and architectural resources is usually determined by using specific criteria as defined by the NHPA under 36 CFR 60.4, including association with an event or individual significant to the past, ability to contribute to scientific research, or ability to add to an understanding of history or prehistory. Cultural resources must usually exceed 50 years of age to be considered for listing on the National Register. However, more recent resources such as Cold War-era buildings may warrant protection if they manifest “exceptional significance.” Traditional cultural resources can be evaluated for National Register-eligibility, as well. However, even if a traditional cultural resource is determined not eligible to the National Register, it may still be significant to a particular American Indian tribe. In this case, such resources may be protected under the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, and Executive Order 13007, which address Indian sacred sites. The significance of American Indian traditional cultural resources is determined by consulting with the appropriate American Indian tribe(s). See Section 3.10 for more information of American Indian traditional cultural resources and applicable laws and regulations concerning them.

3.7.2 Evaluation Approach

For this EIS, impacts to cultural resources are evaluated for lands beneath the Currie/Tippet ATCAA, which includes the proposed MOA airspace in portions of Elko and White Pine Counties. The proposed White Elk MOA would underlay the existing Currie/Tippet ATCAA in all but the southwestern corner (see Figure 2-4). Because the proposed project is an airspace action only those cultural resources that would reasonably be affected by visual (overflights; chaff and flares) and noise intrusions are considered in this EIS. These include architectural resources; archaeological resources with standing structures, such as historic ranches, ghost towns, American Indian settlements; and traditional cultural resources. Prehistoric and historic archaeological sites lacking standing structures are not included as they are generally ground surface or even subsurface deposits that would not be affected by the proposed action. Some prehistoric archaeological sites could contain natural structures such as rockshelters or caves. These structures often house petroglyphs or pictographs, which are etched or painted onto the rock

surfaces. However, studies have found that these types of natural formations are not affected any more by noise vibrations, such as sonic booms, than by natural erosion, wind, or seismic activity (Battis 1983).

Information on cultural resources within the affected environment was derived from conducting background research to identify previously recorded National Register and Nevada State Register of Historic Places (State Register) properties beneath the affected airspace, any ghost towns or historic ranches recorded or known within the same area, and American Indian Reservations. Records searches were also conducted for Elko and White Pine Counties to determine whether any architectural resources or archaeological resources with structures are present on the lands beneath the proposed airspace. Additionally, to determine the types of cultural resources that may be present beneath the proposed MOA, cultural resources records for the UTTR, in western Utah adjacent to the proposed MOA, were reviewed.

Record searches were conducted at Hill AFB for records on the UTTR; the Nevada State Museum in Carson City; the Harry Reid Center for Environmental Studies in Las Vegas; on the National Register Information System, and the on-line Nevada State Register. Additional research was conducted using aerial photographs and various other resources to obtain information on historic ranches, ghost towns, and other areas that contain standing structures that may be historic in nature.

For areas under the proposed MOA and overlying ATCAA, cultural resources with standing structures that are listed on or eligible for listing on the National or State Registers or were listed as known ghost towns were considered. The Air Force recognizes that hundreds of other cultural resources, some documented and some not yet discovered, exist under the airspace. However, aircraft operations are most likely to affect historic structures and districts where setting is an important criterion for significance and where noise vibrations from sonic booms could adversely impact those types of resources. These resources are ones typically found on the National Register or State Register. Conversely, if National Register-listed properties are not affected by the project elements, than non-listed resources are unlikely to be affected.

In an ongoing effort to identify traditional cultural resources, the Air Force is in the process of consulting with American Indian tribes according to the Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments, Executive Order 13084, 13075, and DoD Policy on Indian and native Alaskan Consultation. Section 3.10 describes this process, lists the American Indian tribes contacted by the Air Force regarding the proposed White Elk MOA and operations proposed for the overlying Currie/Tippet ATCAA, and discusses American Indian concerns.

Visual Intrusions

Visual intrusions can include construction of tall structures that intrude into the viewshed of a cultural resource, thus adversely affecting its setting. In the case of a proposed action involving overflights, the

aircraft flying overhead has the potential to adversely affect the setting, feeling, and character of cultural resources within sight of the aircraft. However, for the proposed White Elk MOA, aircraft would fly at an altitude greater than 14,000 feet MSL. At these altitudes aircraft would be difficult to see from the ground. The release of chaff and flares could be considered a visual affect as components of both would remain on the ground or could potentially land on structures or at sacred sites. Flares may be visible very briefly as they exit the aircraft, but chaff cannot be seen from the ground until it lands. Chaff consists of approximately 0.5 to 5.6 million fibers smaller than the size of a hair and what remains of both chaff and flares when they impact the ground are small plastic end caps about the size of a quarter. Flare residual materials also includes felt spacers and chaff cartridges consist of a small rectangular plastic shell approximately six inches long. The chaff fibers also float down to the ground surface, but generally do not accumulate in a quantity sufficient to cause aesthetic impacts (GAO 1998).

Noise Intrusions

Subsonic

Experimental data and models (Battis 1988, Sutherland 1990, King 1985, King *et al.* 1988) show that damage to architectural resources, including adobe buildings, is unlikely to be caused by subsonic noise and vibrations from aircraft overflights. Subsonic, noise-related vibration damage to structures requires high dB levels generated at close proximity to the structures and in a low frequency range (USFS 1992, cf. Battis 1983, 1988). Aircraft must generate a maximum sound level (L_{\max}) of at least 120 dB at a distance of no more than 150 feet AGL to potentially result in structural damage (Battis 1988) and, even at 130 dB, structural damage is unlikely (refer to Appendix F). Sutherland (1990) found that the probability of damage to a poorly constructed or poorly maintained wood frame building is less than 0.3 percent even when the building is directly under a large, high-speed aircraft flying only a few hundred feet AGL.

Supersonic

The proposed action would allow for supersonic flights of fighter aircraft within the existing Currie/Tippet ATCAA at altitudes between 18,000 and 58,000 feet MSL. Supersonic flights can create sonic booms. Sonic booms are commonly associated with structural damage. Most damage claims are for brittle objects, such as glass and plaster. Table 3.7-1 summarizes the threshold of damage that might be expected at various overpressures. There is a large degree of variability in damage experience, and much damage depends on the pre-existing condition of a structure. Breakage data for glass, for example, spans a range of two to three orders of magnitude at a given overpressure. At 1 pound per square foot (psf), the probability of a window breaking ranges from one in a billion (Sutherland 1990) to one in a million (Hershey and Higgins 1976). These damage rates are associated with a combination of boom load and glass condition. At 10 psf, the probability of breakage is between one-in-a-hundred and one- in-a-

thousand. Laboratory tests of glass (White 1972) have shown that properly installed window glass will not break at overpressures below 10 psf, even when subjected to repeated booms, whereas the Haber and Nakaki 1989 study shows that regular failures of good glass would occur with psf in the 4-10 range and above 10 psf from sonic booms from the same direction.

Table 3.7-1 Possible Damage to Structures From Sonic Booms		
<i>Sonic Boom Overpressure Nominal (psf)</i>	<i>Type of Damage</i>	<i>Item Affected</i>
0.5 - 2	Glass	Rarely shattered; either partial or extension of existing.
	Plaster	Fine cracks; extension of existing cracks; more in ceilings; over door frames; between some plaster boards.
	Roofs	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
	Damage to outside walls	Existing cracks in stucco extended.
2 - 4	Glass, plaster, roofs, ceilings	Failures are evident that would have been difficult to forecast in terms of their existing localized condition. Nominally in good condition.
4 - 10	Glass	Regular failures within a population of well-installed glass; industrial as well as domestic greenhouses.
	Plaster	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
	Roofs	High probability rate of failure in nominally good state, slurry-wash; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
	Walls (exterior)	Old, free standing, in fairly good condition can collapse.
	Walls (interior)	Inside ("party") walls known to move at 10 psf.
Greater than 10	Glass	Some good glass will fail regularly to sonic booms from the same direction. Glass with existing faults could shatter and fly. Large window frames move.
	Plaster	Most plaster affected.
	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gale-end and will-plate cracks; domestic chimneys dislodged if not in good condition.
	Ceilings	Plaster boards displaced by nail popping.
	Walls	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.

Source: Haber and Nakaki 1989.

Damage to plaster occurs at similar ranges to glass damage. Plaster has a compounding issue in that it will often crack due to shrinkage while curing, or from stresses as a structure settles, even in the absence of outside loads. Sonic boom damage to plaster often occurs when internal stresses are high from these factors. Some degree of damage to glass and plaster should thus be expected whenever there are sonic

booms, but usually at the low rates noted above. In general, structural damage from sonic booms should be expected only for overpressures above 10 psf.

The effects of noise on cultural resources may also be related to setting. Noise impact to American Indian traditional cultural resources may be related to interference with ceremonies and other traditional activities at sacred sites. Undisturbed habitats, resources, and settings are considered to be critical to religious practices (NPS 1994). Potential impacts can be identified only through consultation with the affected groups (see Section 3.10).

3.7.3 Affected Environment

Twenty-three properties are currently listed in the National Register in Elko and White Pine Counties, Nevada (Table 3.7-2). They consist of military forts, public buildings, railroad depots, mining districts, ditches, cabins, schoolhouses, and a Pony Express station. Additionally, the State Register was reviewed and it was found that six additional properties not listed on the National Register are listed on the State Register in Elko and White Pine Counties. Only 3 of these 29 resources are located within the lands beneath the affected airspace (see Table 3.7-2).

An additional 43 cultural resources are present within the lands beneath the affected airspace that contain structures or the remains of structures such as foundations and are considered eligible for inclusion on the National Register (Table 3.7-3). A search of ghost towns within the lands beneath the affected airspace revealed the presence of 18 ghost towns. Several of the ghost towns contain standing wood/log structures associated with historic mining, ranching, stage or Pony Express routes, or railroad stations (Table 3.7-4). Most of the ghost towns have not been subjected to professional archaeological and/or architectural assessments and many may be eligible to the National or State Registers pending further investigation by cultural resources professionals.

Table 3.7-2 National and State Register Sites in Elko and White Pine Counties, Nevada

<i>Site Name</i>	<i>County/General Location</i>	<i>National or State Register Property</i>
*American Legion Hall	White Pine/McGill	National
Baker Ranger Station	White Pine/Great Basin National Park	National
Capital Theater	White Pine/Ely	National
Central Theater	White Pine/Ely	National
East Ely Depot	White Pine/East Ely	National
Ely LDS Stake Tabernacle	White Pine/Ely	National
Fort Ruby	White Pine/Hobson on west side of Ruby Lake	National
*Fort Schellbourne	White Pine/43 miles north of Ely	National
Johnson Lake Mine Historic District	White Pine/Great Basin National Park	National
Lehman Orchard and Aqueduct	White Pine/Lehman Caves National Monument	National and State
*McGill Drug Store	White Pine/McGill	National

Table 3.7-2 National and State Register Sites in Elko and White Pine Counties, Nevada (con't)

<i>Site Name</i>	<i>County/General Location</i>	<i>National or State Register Property</i>
Nevada Northern Railway East Ely Yards and Shops	White Pine/Ely	National
Osceola (East) Ditch	White Pine/Baker	National
Rhodes Cabin	White Pine/Lehman Caves National Monument	National and State
Sunshine Locality	White Pine/Restricted	National and State
Ward Charcoal Ovens	White Pine/south of Ely	National and State
White Pine County Courthouse	White Pine/Ely	National
U.S. Post Office, Ely	White Pine/Ely	National
Elko County Courthouse	Elko/Elko	National
Gold Creek Ranger Station	Elko/Mountain City	National
Midas Schoolhouse	Elko/Midas	National and State
Ruby Valley Pony Express Station	Elko/Elko	National and State
U.S. Post Office, Elko Main	Elko/Elko	National
Lamoille Organization Camp District	Elko/near Lamoille	National
Commercial Hotel	Elko/Elko	State
Henderson Bank Building	Elko/Elko	State
Skelton Hotel	Elko/Jiggs	State
Metropolis Dam	Elko/North of Wells	State
Areline's (Whore House)	White Pine/East Ely	State
Collins Hotel	White Pine/Ely	State

Note: *Located within lands beneath the affected airspace.

Table 3-7.3 National Register-eligible Cultural Resources within Lands beneath the Affected Airspace

<i>Site Number</i>	<i>Prehistoric/Historic</i>	<i>Site Description</i>
WP641	Historic	Fort Pierce graves
WP1287	Historic	Cut tree fence and corral
WP1341	Historic	Railroad station and associated structures
WP1343	Historic	Foundation with walls
WP1552	Historic	Pony Express and Stage Trail with associated structures
WP1704	Historic	Hamilton Stage Station with foundation and partial walls
WP1767	Historic	Shed remnants
WP1889	Historic	Possible foundation
WP2108	Historic	Corral and horse trap
WP2136	Historic	Abandoned ranch
WP2667	Historic	Structures and Artifacts Associated with Gallagher Gap Race Track
WP2963	Historic	Check dams and prospects
WP3914	Historic	Dugout Cabin
WP4203	Historic	Dugout cabin and associated ruins
WP4221	Historic	Mining Area
WP4360	Historic	Stone house with barn and corral
WP4526	Both	Cabin foundation and corral/Lithic scatter

Table 3-7.3 National Register-eligible Cultural Resources within Lands beneath the Affected Airspace (con't)

<i>Site Number</i>	<i>Prehistoric/Historic</i>	<i>Site Description</i>
WP4960	Historic	Mining complex
WP4962	Historic	Grand Deposit Townsite
WP4966	Historic	Steptoe City
*WP4967	Historic	Schellbourne Townsite (distinct from Fort Schellbourne)
WP4985	Historic	Meadow Creek Ranch
WP4986	Historic	O'Neill Cabin
WP4987	Both	Corral, Trash, and Lithics
WP4988	Historic	Home Ranch
WP4989	Both	Osborne Ranch Homestead/Lithic scatter
WP4990	Historic	Homestead with several structures
WP5002	Both	Trash scatter and fence /Lithic scatter
WP5003	Historic	Homestead with foundations, dugout cabin, corral and barn/shed
WP5829	Historic	Nevada Northern Railroad Line
WP6215	Historic	Cabin – partly collapsed
WP6432	Both	Prospect, Cairn, and Lithic Scatter (Only the prehistoric component is considered eligible)
WP6434	Both	Mining complex/ Lithic scatter
WP6536	Both	Gallagher Gap Rockwall/ Lithic scatter
*WP6564	Historic	Blaine mining camp
WP6573	Historic	Camble Graveyard
WP6574	Historic	Mollison Graveyard
WP6575	Historic	Cherry Creek Graveyard
WP6577	Historic	Homestead with several structures
WP6774	Historic	Miner's cabin and prospect
WP6978	Historic	Cabin
WP7244	Both	Privy/Lithic scatter
WP7717	Historic	Graveyard

Notes: "WP" prefix indicates location in White Pine County. No sites with standing structures were present in Elko County.

*Also listed under ghost towns

Table 3.7-4 Ghost Towns within Lands beneath the Affected Airspace

<i>Name</i>	<i>County</i>	<i>Remains</i>
Aurum	White Pine	Grave stones with iron fencing
Blaine	White Pine	Scattered ruins near Campbell Ranch
Cherry Creek	White Pine	Wells Fargo Station and many other buildings; town currently has 20 residents
Currie	Elko	Currie Hotel, Railroad depot and other buildings; town has 20 current residents
Dolly Varden	Elko	Some buildings
Duck Creek	White Pine	Ranch buildings, now a state fish hatchery
Egan Canyon	White Pine	Collapsed buildings, mining ruins
Hunter	White Pine	Mill and liquor still from the 1920s
Kingsley	Elko	Some buildings, mines
McGill	White Pine	Many buildings left from this copper company town (1910s); 1,050 current residents
Melvin	White Pine	Ranch and railroad siding
Muncy	White Pine	Mill foundations
Piermont	White Pine	Mining ruins
Ruby Hill	White Pine	A few foundations
Schellbourne	White Pine	Many well-preserved buildings on private ranch
Siegel	White Pine	Ruins only
Spruce Mountain	Elko	Buildings, mining ore chutes, dumps, etc.
Stone House	White Pine	Several structures on private ranch

There is one American Indian reservation beneath the affected airspace– the South Fork Indian Reservation (Odgers Ranch). Consultation with American Indian groups did not reveal any information about traditional cultural resources under the affected airspace (see Section 3.10). Although traditional cultural resources have not been identified, at least one area under the proposed airspace is used for religious rituals.

3.8 SOCIOECONOMICS

Socioeconomics is defined as the social and economic activities associated with the human environment, particularly population and economic activity. Economic activity typically includes employment, personal income, and industrial growth. Socioeconomic data are presented at the county level in order to analyze baseline socioeconomic conditions in the context of county trends. Data have been collected from previously published documents issued by federal, state, and local agencies; from state and national databases (e.g., U.S. Census Bureau), and personal correspondence with county and local officials.

Analyses of impacts to socioeconomic characteristics potentially resulting from implementation of the proposed action require establishment of an affected environment. The proposed airspace actions overlie Elko and White Pine Counties in Nevada. During scoping, officials from each of these counties expressed concerns that the proposal would impact their respective economies; therefore, the primary focus of this analysis is the potential impact the proposed airspace proposal would have on the socioeconomic conditions of Elko County and White Pine County (Figure 3.8-1). White Pine County officials and business managers were concerned also about potential impacts on revenue in Ely, Nevada due to perceived conflicts in airspace used by visiting glider pilots.

3.8.1 Population

The populations of Elko and White Pine Counties rank in the top 10 of Nevada's 17 counties. At the time of the U.S. Census Bureau 2000 census, Elko County was ranked 4th and White Pine County was ranked 10th. As of July 2006, the population of Elko County was estimated to have grown to approximately 47,114 people, representing a 4 percent increase since 2000 while White Pine County's population of 9,150 was down about 1 percent for the same 2000 to 2006 period. By comparison, the estimated population of the State of Nevada increased nearly 20 percent in the period from 2000 to 2006 (USCB 2008a).

<i>2006 Population Estimates</i>	
Elko County	47,114
White Pine County	9,150
State of Nevada	2,495,529
<i>Source: U.S. Census Bureau 2008a</i>	

Population data compiled over a 16-year period from 1990 to 2006 indicate that while Elko County's population grew 29 percent, the population of White Pine County grew 1 percent. During the same 16-year period, the population of Nevada grew 52 percent (USCB 2008a).

3.8.2 Employment and Earnings

The regional economy of northeastern Nevada has been largely tied to the mining industry. Mining operations and the supporting industries provide significant revenues for local communities. According to the 2005 Elko County Target Industry Report, the northeastern Nevada region is the third largest gold

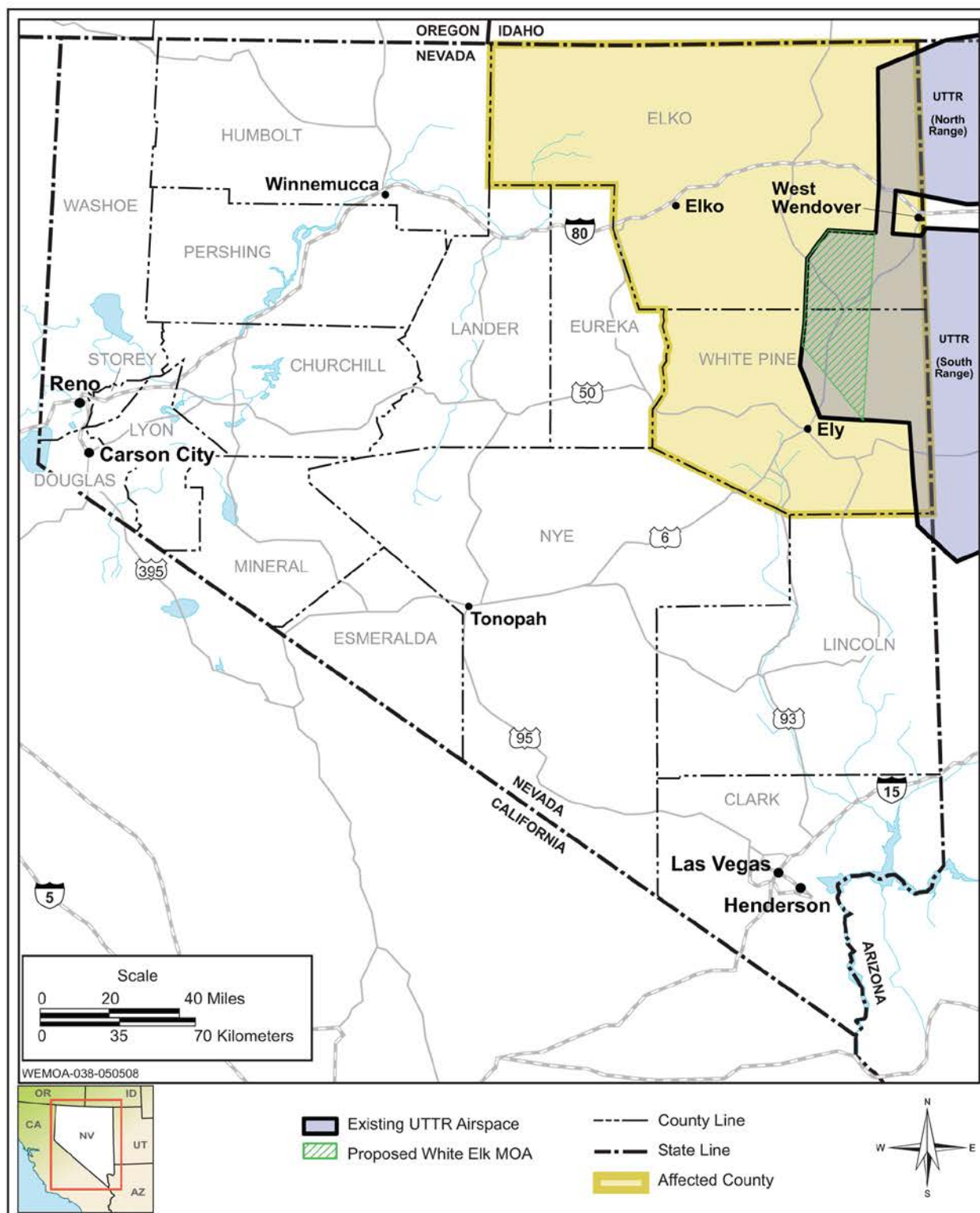


Figure 3.8-1 Socioeconomic Affected Environment

mining community in the world (Elko County 2005). Also providing large revenues for local communities has been the expansion of gambling casinos and casino hotels.

Data provided by the U.S. Census Bureau indicate that the largest contributions to employment in Elko County in 2000 were made by entertainment, recreation and food services (22.2 percent); mining and agriculture (22.1 percent); and education, health, and social services (13.6 percent). Median household income in Elko County was \$48,383 (USCB 2008b). The unemployment rate in the county was 5.7 percent as reported in the 2000 census.

In 2000, White Pine County employment sectors with the greatest number of jobs included public administration (18.8 percent); education, health, and social services (18.0 percent); and retail trade (12.6 percent). Census data indicate median household income in White Pine County was \$36,688 (USCB 2008b). Following the loss of jobs tied to 1999 mine closures, the unemployment rate in the county was 7.6 percent (White Pine County 2006, USCB 2008b).

State of Nevada employment in entertainment, recreation, and food services (26.3 percent) and education, health, and social services (12.9 percent) compared closely with sectors of Elko County, while the state's retail trade (11.3 percent) compared strongly with that of White Pine County (USCB 2008b). The unemployment rate in the state reported in the 2000 census was 6.2 percent. Median household income reported was \$44,581 which was greater than White Pine County but less than the median household income of Elko County (USCB 2008b).

Yelland Field

The Ely Airport at Yelland Field is owned and operated by White Pine County. The Ely Jet Center is a private, fixed-base operator (FBO) at Yelland Field that provides aircraft services such as fuel, oxygen, tie-downs, hangar spaces, and maintenance. For the 12-month period ending July 31, 2008, the FAA reported 9,091 aircraft operations (mostly takeoffs and landings) out of Yelland Field; an average of 25 per day. The mix included 48 percent air carrier, 23 percent local and itinerant general aviation, 28 percent air taxi and 1 percent military. At the time of the survey, 18 aircraft were based at the airport: 9 single engine, 1 multi-engine, 5 glider, and 3 ultra light (USDOT 2008). Great Lakes Airlines offers roundtrip flights to Moab, Utah and Denver, Colorado three times per week (Great Lakes Aviation 2008). Over 100 emergency medical evacuations are reported to fly from Yelland Field annually. Approximately 50 percent of these flights are to and from Salt Lake City hospitals; other medical evacuation flights travel to Reno, Elko, or Las Vegas (personal communication, Adams 2008).

White Pine County Commissioners report plans to expand Yelland Field capabilities through a Federal Aviation Association grant to lengthen the runway and provide precision approach capabilities to build jet

traffic. The Ely Airport Advisory Board expects increased economic development to be tied to granting activities (personal communication, Adams 2008).

Glider activities out of Yelland Field represent a source of summer revenue to the town of Ely. The FBO reported that 38 glider pilots utilized their services during the 2008 summer season, resulting in approximately \$17,000 in revenue to the FBO from the provision of these services. Most glider pilots stay for 4 to 6 weeks at a time, typically hooking up motor homes to County facilities at the airport. The number of glider visitors are not kept on record, however, the FBO reports that most pilots travel alone to Ely, while a few bring spouses and less often, children (personal communication, Adams 2008). The Nevada Commission on Tourism uses a figure of \$150 per day to determine economic impact created by city visitors. Because most glider visitors stay in motor homes, and because visitors are more likely to be outdoors, a more conservative estimate of \$70 per day is used for this analysis (WPEDC 2006). Revenue to Ely from glider visits in 2008 was approximately \$36,600.

Approximate Revenue to Ely from Glider Visits in 2008			
Service	Number of Visitors	Number of Days	Dollars Spent
Goods , Services, and Lodging ¹	38	35	\$19,600
Glider services from FBO	38	35	\$17,000
		Total	\$36,600

Note: ¹ Based on \$70 per day.

3.9 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

In 1994, Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued to focus attention of federal agencies on human health and environmental conditions in minority and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. To provide a thorough environmental justice evaluation, this section gives particular attention to the distribution of race and poverty status in areas potentially affected by implementation of the proposed action. For this analysis, minority and low-income populations are defined as follows:

- **Minority Populations:** Persons of Hispanic origin of any race; African Americans; American Indians, Eskimos, and Aleuts; and Asians or Pacific Islanders.
- **Low-Income Populations:** Persons living below the poverty level, based on a total annual income of \$19,350 for a family of four as reported in the *2005 Federal Poverty Guidelines* (U.S. Department of Health and Human Services).

Estimates of these two population categories were based on data from the 2000 census (the most comprehensive dataset for population statistics), 2005 poverty estimates, and 2006 population estimates for Elko County and White Pine County. Although the census does not report minority population as a class, it reports population by race and ethnic origin. These data were used to estimate minority populations potentially affected by implementation of the proposed action.

In 1997, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks (Protection of Children)*, was issued to ensure the protection of children. Socioeconomic data specific to the distribution of population by age and the proximity of youth-related developments (e.g., day care centers and schools) that could potentially be incompatible with the proposed action are presented. Data used for protection of children analysis were also collected from the *2000 Census of Population and Housing* (USCB 2008b). For the purposes of this analysis, children are defined as persons age 17 and under as enumerated by the United States Census.

The analysis of environmental justice considers changes in noise levels created by the proposed action for population centers under or near the proposed MOA and overlying ATCAA. Subsonic noise levels would remain below DNL of 45 dB; therefore, the analysis considers the populations in White Pine and Elko Counties that could be affected by supersonic noise of CDNL values greater than 60 dB; these values equate to DNL of 65 dB.

3.9.1 Minority and Low-Income Populations

Although BLM and USFS lands make up the majority of lands affected by noise, residential areas (i.e., homes) and ranches are also affected. Existing land use in the vicinity of the proposed airspace is discussed in detail in Section 3.5, Land Use.

Table 3.9-1 displays the total population, total minority population, percentage minority, total low-income population, and low-income percentages for the populations under this airspace proposal. Minority and low-income populations in the affected areas are then compared with each of the two counties. State of Nevada minority and low-income populations are also provided. The information presented is derived from the *2000 United States Census Data*, *2006 Population Estimates*, and *2005 Poverty Estimates for Elko County and White Pine County* (USCB 2008 a, b, c). These provide the latest source of information containing data at the required level of detail regarding minority and low-income population groups. These groups, along with the rest of the population, tend to concentrate in and near the few towns in the counties. At the southern edge of the ATCAA airspace, McGill, Nevada, represents the largest community with a population of around 1,000. For the remainder of the ATCAA, and especially under the proposed MOA, total population numbers a few hundred.

Table 3.9-1 Minority and Low-Income Populations in Elko County and White Pine County					
	<i>Total Population¹</i>	<i>Minority Population²</i>	<i>Percent Minority</i>	<i>Low-Income Population³</i>	<i>Percent Low-Income</i>
Elko County	47,114	13,508	29%	4,435	9%
White Pine County	9,150	2,025	22%	1,046	11%
State of Nevada	2,495,529	1,026,812	41%	263,522	11%

Source: USCB 2008

Notes: ¹based on 2006 Population Estimate, ²2000 Census Data, and ³2005 Poverty Estimates

3.9.2 Protection of Children

In 2000, the number of Elko County residents estimated to be age 17 and younger was 14,699 representing approximately 31 percent of the total county population (USCB 2008b). White Pine County residents estimated to be under the age of 18 was 2,220 representing approximately 24 percent of the total county population. In the state, 26 percent of the total population were children 17 years and younger (USCB 2008b). One school, McGill Elementary in White Pine County, is located underneath the Currie/Tippet ATCAA. Enrollment for the 2007-2008 school year is 152 students (personal communication, Dolezal 2008).

3.10 AMERICAN INDIAN CONCERNS

This EIS presents American Indian issues and concerns as a separate section for the following reasons:

1. The proposed action overlies one American Indian reservation and the historical lands of several tribes. It is also in the vicinity of several other American Indian reservations. As a result of this Proposed Action, the Air Force has begun consultation with these tribes as required. As part of the discussion, several issues or concerns have been raised, including those relating to noise, safety, natural and cultural resources, and socioeconomics.
2. Federally-recognized tribes have a special relationship with the federal government through laws, treaties, Executive Orders (E.O.s), and legal decisions, which are implemented in DoD policies. Among these policies is the need to consult with tribes that could be affected by federal management decisions.
3. American Indian issues cross-cut many of the traditional NEPA resource categories. As such, it is not always sufficient to address these concerns under “Cultural Resources” and the Air Force did not want to split discussions among several different sections of the document. As a result, the Air Force has put all of these analyses into one section. This section examines issues identified during the scoping process using the standard environmental impact analysis process, while providing some historical background to put these concerns in context.

Following a discussion of applicable laws, regulations, and Executive Orders; past and present relationships between American Indian peoples and the affected environment are presented along with the baseline conditions on the South Fork Indian Reservation at Odgers Ranch, which underlies the existing Currie/Tippet ATCAA and the proposed White Elk MOA. The issues and concerns identified during consultation with American Indian tribes are also discussed throughout and resource areas of significance to the tribes consulted are then presented, organized according to the sequence of NEPA resource categories discussed overall in Chapters 3 and 4 of this EIS.

3.10.1 Laws, Regulations, and Executive Orders

American Indian people are distinct from many other ethnic groups and minorities in the U.S. because they are descendants of the original indigenous inhabitants of this land. Tribal organizations pre-date the establishment of the U.S. Recognizing this continuous structure, American Indian nations hold a unique relationship with the federal government.

American Indian tribes are considered domestic dependent nations under the protection of the U.S. federal government. Although sovereign in principle, American Indian tribes do not have the absolute sovereignty of an independent nation. That is, they do not exercise international independence. Rather, they are considered a domestic dependent nation- a nation within a nation. This is similar to, but not as restricted as, the sovereignty of states within the U.S. Federally recognized Indian tribes possess all the powers of the sovereign nation, unless treaties and acts of Congress specifically limit these powers.

The principles of Indian sovereignty as identified by the Department of Justice (1995) are: “1) the Constitution vests Congress with plenary power over Indian affairs, 2) Indian tribes retain important sovereign powers over their members and their territory, subject to the plenary power of Congress; and 3) the United States has a trust responsibility to Indian tribes, which guides and limits the Federal Government in dealings with Indian tribes.” As stated in the Executive Memorandum on Government-to-Government Relations between the United States and Indian Tribes (1994), consultation between the U.S. government and American Indian tribes is conducted on a government-to-government basis, and “the executive branch shall assess the impact of agency activities on tribal trust resources and assure that tribal interests are considered before the activities are undertaken....” The Department of Defense has their own specific policies (*DoD Interactions with Federally-Recognized Tribes*, DoD Instruction 4710.02, 2006) related to American Indian consultation as expressed in the American Indian and Alaska Native Policy.

Government-to-Government Consultation

Several laws and regulations address the requirement of federal agencies to notify or consult with American Indian tribes or otherwise consider their interests when planning and implementing federal undertakings. In particular, on April 29, 1994, the President issued the *Memorandum on Government-to-Government Relations with Native American Tribal Governments*, which specifies a commitment to developing more effective day-to-day working relationships with sovereign tribal governments. Among the provisions of this memorandum are the following requirements:

- The head of each executive department and agency shall be responsible for ensuring that the department or agency operates within a government-to-government relationship with federally recognized tribal governments.

- Each executive department and agency shall consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally-recognized tribal governments. All such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals.
- Each executive department and agency shall assess the impact of federal government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, and activities.
- Each executive department and agency shall take appropriate steps to remove any procedural impediments to working directly and effectively with tribal governments on activities that affect the trust property and/or governmental rights of the tribes.

In addition to the Memorandum, President Clinton's E.O., 13175 (November 6, 2000) reaffirms the U.S. Government's responsibility for continued collaboration and consultation with Tribal Governments in the development of Federal policies that have tribal implications, to strengthen the U.S. government-to-government relationships with Indian tribes, and reduce the imposition of un-funded mandates upon Indian tribes. This executive order supersedes Executive Order 13084 signed May 14, 1998.

The DoD Instruction 4710.02 implements the DoD American Indian and Alaska Native Policy, assigns responsibilities, and provides procedures for DoD interaction with federally-recognized tribes. It is DoD policy to:

1. meet its responsibilities to tribes as derived from Federal trust doctrine, treaties, and agreements between the U.S. Government and tribal governments, and to comply with Federal statutes, regulations, Presidential Memorandums, and Executive Orders governing DoD interactions with tribes;
2. build stable and enduring government-to-government relations with federally-recognized tribal governments in a manner that sustains the DoD mission and minimizes effects on protected tribal resources;
3. fully integrate, down to staff officers and civilians officials at the installation level the principals and practices of meaningful consultation and communication with tribes;
4. take into consideration the significance that tribes ascribe to protected tribal resources.

The DoD shall consult with tribes whenever proposing an action that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands. Protected Tribal Resources are those natural resource and properties of traditional or customary religious or cultural importance, either on or off Indian land, retained or reserved by or for Indian Tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources. Tribal rights are those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, un-extinguished aboriginal title, treaty, statute, judicial decision Executive Order or agreement, and that gives rise to legally enforceable remedies.

Other laws and regulations requiring consultation with American Indians include the NHPA of 1966, American Indian Religious Freedom Act (AIRFA), and E.O. 13007. The NHPA requires agencies to consult with Native American Tribes if a proposed federal action may affect historic properties to which they attach religious and cultural significance. AIRFA sets the policy of the U.S. to “protect and preserve for Native Americans their inherit right of freedom to believe, express, and exercise the traditional religions of the American Indian....including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites.”

E.O. 13007, *Indian Sacred Sites*, issued on May 24, 1996 requires that in managing federal lands, agencies must accommodate access and ceremonial use of sacred sites, which may or may not be protected by other laws or regulations, and must avoid adversely affecting the physical integrity of these sites.

3.10.2 Affected Environment

History of the Area

The general area of the proposed airspace action was inhabited by Goshute and other Western Shoshone groups prior to western contact. The names “Shoshoni,” “Shoshone,” and “Shoshonean” are used to refer to an ethnographic group and a language spoken both by people known as the Shoshone and by other groups. As a language, Shoshonean is in the Central Numic branch of the Uto-Aztecan family. It is spoken by disparate and dialectically diverse peoples now known as the Goshute, the Western Shoshone, the Northern Shoshone (e.g., the Bannock and the Northwestern Band), and the Eastern Shoshone (Sucec 2007).

Disagreement exists about the origin and meaning of the term Goshute. It may come from the Shoshone word for ashes, or it may have been the name of a headman. Cultural anthropologists and historians have understood and articulated that what was referred to as the Goshute did not constitute one group through time nor was it a name by which all members recognized themselves (Sucec 2007). The Goshute Indians consisted of numerous small bands each having its own name (Table 3.10-1).

Table 3.10-1 Self-Identified Goshute Groups Visited By Powell and Ingalls in 1872				
<i>Name</i>	<i>Location</i>	<i>Chief</i>	<i>Population</i>	<i>Source</i>
<i>Pagayuats</i>	Otter Creek, Utah	Ti-av'-um-pi-a	107	John Wesley Powell 1873 in Fowler and Fowler (1971a:Table 1); Reagan (1934:45); Steward (1938:132)
<i>Pierruiats</i>	Deep Creek, Utah	Tu-gu'vi	About 107	John Wesley Powell 1873 in (Fowler and Fowler 1971a:Table 1); Reagan (1934:45); Steward (1938:132, 137)
<i>Torounto goats</i>	Egan County, Nevada	To-go'mun-tso	104	Reagan (1934:45); Steward (1938:132)
<i>Tuwurints</i>	Snake Creek in Snake Valley, Utah/Nevada	Tat'si-nup	About 107	John Wesley Powell 1873 in (Fowler and Fowler 1971a:Table 1); Reagan (1934:45); Steward (1938:132, 137)
<i>Unkagarits</i>	Skull Valley, Utah	Si-pu-rus	149 many Goshute Villages	John Wesley Powell 1873 in (Fowler and Fowler 1971a:Table 1); Reagan (1934:45); Steward (1938:132, 137)

Source: Sucec 2007

Table 3.10-1 does not include groups that resided in Antelope, Snake, Spring, and Steptoe Valleys in Nevada, as well as other places in Utah where Goshute were known to live (Sucec 2007).

The Goshute and Shoshone do not believe in the theory of Numic expansion, but believe that their ancestors have lived in the eastern Great Basin for thousands of years, as far back as the archaeologically defined Paleoindian and Archaic periods. They believe that enough continuity exists in the archaeological record to demonstrate that their ancestors have been in the eastern Great Basin for thousands of years (Sucec 2007).

Euro-American settlers of the mid-nineteenth century impact the lifeways of the Western Shoshone. The Goshute were impacted by the establishment of the Church of Jesus Christ of Latter Day Saints, the Mormons, in the territory as early as 1847. Euro-American penetration into and through Western Shoshone territory was accelerated by the discovery of gold in California in 1848. Gold was also discovered at Gold Canyon in the Carson River in 1849. Many Euro-Americans were brought to Nevada by the discovery of the Comstock Lode in 1857 (Thomas *et al.* 1986). This period saw the beginning of government-to-government consultation between the American Indians of the Nevada area and the U.S. federal government in the form of numerous treaties often with vague language and unsatisfactory terms.

Treaties

In a treaty signed on October 12, 1863 (Table 3.10-2), the U.S. government identified Indians living along the southern perimeter of the Great Salt Lake and Desert from Tooele Valley to Steptoe Valley in eastern Nevada as “bands of the Shoshonee-Goship.” Although the treaty did not indicate the names of individual bands, it identified at least four headmen, suggesting that possibly four groups were represented. The treaty also served to distinguish these Indians from the Western Bands of the Shoshone who had signed a treaty in Nevada just 11 days prior (Table 3.10-2). The treaty defined their territory in general terms (Sucec 2007):

It is understood that the boundaries of the country claimed and occupied by the Goship tribe, as defined and described by said band, are as follows: On the north by the middle of the Great Desert, on the west by Steptoe Valley [Nevada] on the south by Tooele or Green Mountains [?]; and on the east by Great Salt Lake, Tuilla [Tooele] and Rush Valleys.

Table 3.10-2 Treaties Negotiated with Shoshonean Speaking Groups to West and South		
<i>Name of Treaty</i>	<i>Date/Location</i>	<i>Source</i>
Treaty with the Shoshoni-Goship, ratified	October 12, 1863 at Tooele (then spelled Tuilla) Valley, Utah	Kappler 1904 :895-860
Treaty with the Western Shoshoni, ratified	October 1, 1863, at Ruby Valley Nevada	Kappler 1904: 851-853

Source: Sucec 2007

Historical and ethnographic sources indicate that the Goshute occupied a larger area than that identified by the treaty. The Wasatch Piedmont, beyond the eastern shore of the Great Salt Lake, was known to have been part of the Goshutes’ territory. As time passed Goshute territory was reported to be constrained south of the Great Salt Lake and west to Nevada. By the 1930s their title to lands was limited to the reservations at Skull Valley near Tooele, Utah and Deep Creek Valley near Ibapah, Utah, but they used lands outside reservation boundaries (Sucec 2007).

As part of the Treaty with the Western Shoshoni, the Western Shoshone agreed to cease hostilities against immigrants and officers of the federal government. The Western Shoshone also agreed to “abandon the roaming life” and settle on reservations at a time to be determined by the President of the U.S. In return for these concessions, the Western Shoshone would receive annual payments of \$5,000 each, to be delivered in the form of provisions, clothing, and livestock. At no time did the Western Shoshone actually surrender their lands (Thomas *et al.* 1986).

Representatives of the Central Pacific Railroad founded the town of Elko, Nevada, in 1868. Many Shoshone families began camping nearby and working at mining and railroad jobs in and around Elko. For almost half a century, they lived in a series of camps in the Elko area with no land set aside for their exclusive use. Finally, in 1918 an Executive Order established a 160-acre reservation near the city of

Elko. The 250 Shoshones of Elko were forcibly moved once more before receiving their present parcel of land near Elko in 1931 (Temoak 2008).

In the 1870s Major Henry Douglas held a series of councils including meetings with over 500 Shoshones whose representatives requested parcels of good farming land with adequate water, preferably near Grass Valley. Douglas promised to arrange what he could, but no reservations in Grass Valley or anywhere else were forthcoming in the 1870s. Several Shoshones joined Bannock and Northern Paiute parties in waging sporadic warfare. At the close of the 1870s the order came that the Shoshones were to travel to the Idaho border to join the Duck Valley Reservation. In March of 1897 a delegation of 19 Shoshone captains unanimously expressed their strong displeasure at the order and refused to move. In a separate action the Shoshone were told that they would not receive the payments stipulated by the treaty of 1863 unless they took up residence on the Fort Hall reservation in Idaho. Despite such incidents, the situation of the Western Shoshone changed little until federal land was set aside for "Indian colonies" in Reno, Carson City, Battle Mountain, Elko and elsewhere in the early 1900s (Thomas *et al.* 1986).

The Indian Reorganization Act of 1934 allowed the Shoshone to organize governments "on a reservation basis only" and in 1935 the Western Shoshone were encouraged to organize their own legally constituted tribes on newly established reservations (Thomas *et al.* 1986, www.temoaktribe.com). In the 1930s many groups of the Western Shoshone joined to elect a traditional council to arbitrate their demands. The council, although informally selected, considered chief Temoak and his descendants as leaders. Several groups, including the White Knife and Reese River Bands, did not participate in the council. However, the U.S. government refused to recognize the traditional Temoak council as a legally constituted tribe and organized a government sponsored Temoak Bands Council. This government-sponsored council was not popular with many of the more traditional Western Shoshone, resulting in the 1974 establishment of the United Western Shoshone Legal Defense and Education Association (now called the Sacred Lands Association) (Thomas *et al.* 1986).

The more traditional Western Shoshone went before the Indian Claims Commission arguing that the Temoak Bands Council did not represent the interests of the Western Shoshone and that the title to Western Shoshone lands had never legally passed into U.S. government control. Their claims, and subsequent appeals, were rejected in a 1979 court decision. The Indian Claims Commission ruled that the Western Shoshone had lost title to their lands in the Treaty of Ruby Valley of 1863. A 1980 court decision ruled that whereas the Western Shoshone has not lost title to their lands in 1863 or in subsequent years, they lost title as of 1979, when the judgment of the Indian Claims Commission was delivered. The tribe appealed to the U.S. Supreme Court, which ruled in 1985 that the \$26 million paid to the Western Shoshone in 1979 extinguished their title to the 24 million acres of land (Thomas *et al.* 1986).

There were several other treaties between the U.S. government and other Shoshone groups; however their regions of impact fall outside of the proposed White Elk MOA and Currie/Tippet ATCAA affected environment. Following this period of treaties, several American Indian Reservations were set aside.

Reservations and Colonies

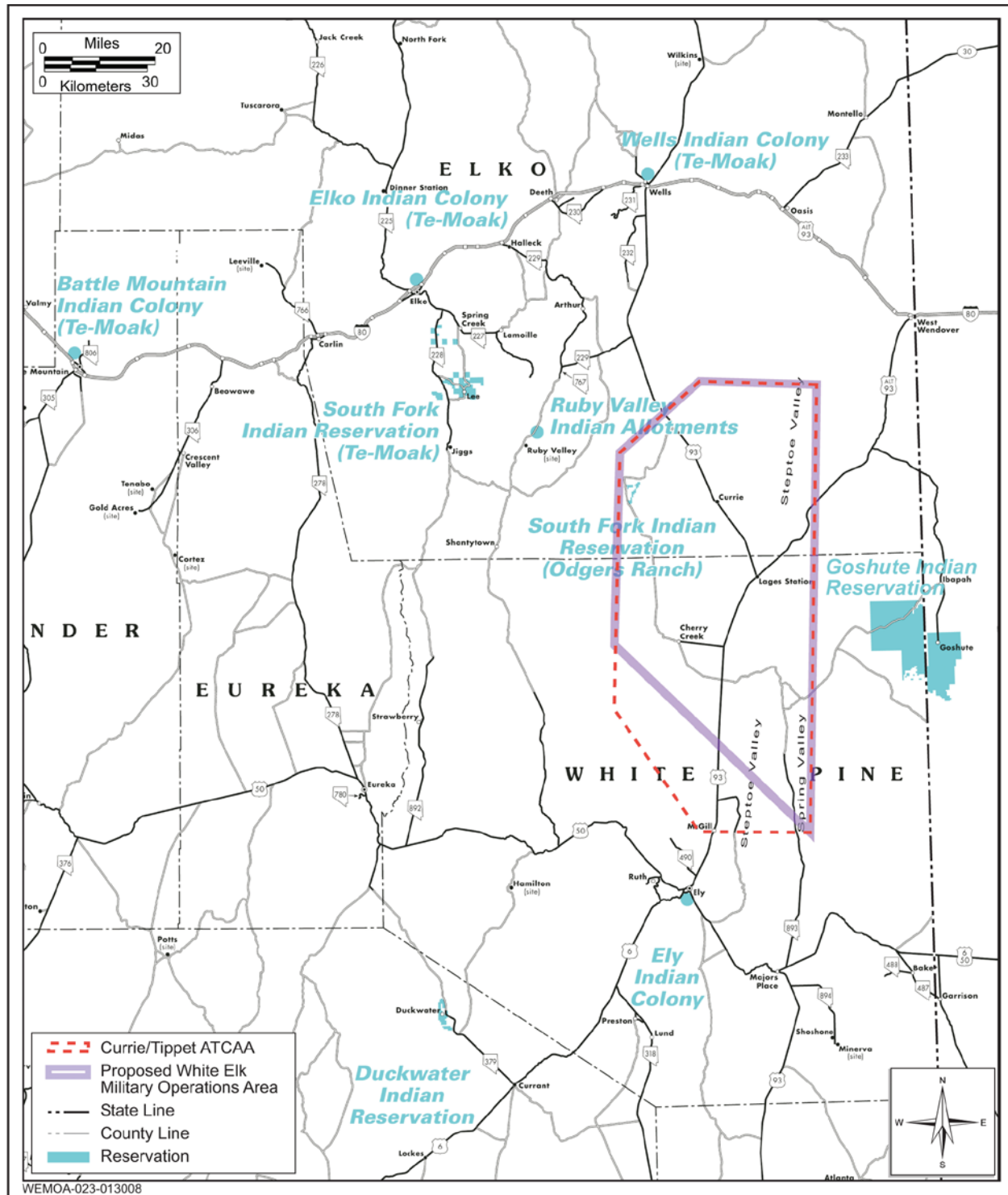
There is one American Indian reservation located in the northwest corner of the proposed MOA – the South Fork Indian Reservation (Odgers Ranch). Nearby reservations include the main South Fork Indian Reservation at Lee, Nevada near Elko and Ruby Valley Indian Allotments to the northwest; the Ely Indian Colony to the south; and the Goshute Indian Reservation to the east (Figure 3.10-1).

3.10.3 Issues and Concerns Raised During Consultation

The proposed MOA is located underneath ATCAA airspace directly adjacent to the UTTR in western Utah. The proposed MOA and overlying Currie/Tippet ATCAA would be utilized by aircraft assigned to Hill AFB. Therefore, the following discussion of government-to-government consultation between the Air Force at Hill AFB and American Indian tribes in the area is included in this EIS.

From September 26 to September 30, 1999, Hill AFB held a consultation meeting with representatives from the Goshute Indian Tribe of Ibapah, Utah; the Skull Valley Band of Goshute Indians at Salt Lake City, Utah; and the Northwestern Band of the Shoshone Nation at Pocatello, Idaho and Brigham City, Utah. The Ute Indian Tribe at Fort Duchesne, Utah and the Te-Moak Tribe of Western Shoshone at Elko, Nevada, were invited but declined to attend the 1999 meeting. Since this consultation, Hill AFB managers and staff have continued to consult with tribes that have an association or appear to have a potential association with Hill AFB managed lands (personal communication, Hirschi 2008). Based on the analysis of textual materials and tribal consultations, eleven tribes have been determined to be associated with Hill AFB managed lands. Eight additional tribes may have an affiliation with Hill AFB managed lands because either their oral tradition and/or historical references place them in the Great Salt Lake Desert (Sucec 2007).

In September 2007, at the annual American Indians meeting held as part of Hill AFB's Cultural Resources Management Program, the Skull Valley Band of Goshute Indians and the Goshute Indian Tribe expressed concerns over low flying aircraft. The sight and sounds of low flying aircraft disrupt sacred ceremonies and disturb livestock. These two groups have also requested that Air Force aircraft not fly over reservation lands. Concerns were also expressed about the potential danger posed to American Indian Tribes from munitions mishaps over reservation lands (Hill AFB 2007).



**Figure 3.10-1 Indian Reservations and Colonies Underneath and Adjacent to
Proposed White Elk MOA and Currie/Tippet ATCAA**
(Source: Nevada Department of Transportation 2005)

As part of government-to-government consultation specific to the proposed action (the creation of the White Elk MOA and proposed activities in the Currie/Tippet ATCAA), the Air Force has contacted 37 American Indian tribes, colonies, and other organizations regarding the Air Force proposal (Table 3.10-3). Groups contacted included those who live in the vicinity of the proposed MOA and those who lived there in the past. The list was compiled from the 19 tribes contacted by Hill AFB as part of their consultation process and additional tribes included in consultation with the Elko and Ely Districts of the BLM. These groups were contacted through IICEP letters describing the Air Force proposal and via telephone to confirm receipt of the IICEP letters and invitations to public meetings regarding the airspace proposal.

Table 3.10-3 American Indian Groups Contacted		
Arapaho Tribe of Wind River Reservation	Battle Mountain Band Council	Bureau of Indian Affairs - Eastern Nevada Agency
Confederated Salish & Kootenai Tribes	Crow Tribe of Montana	Duck Valley Shoshone-Paiute Tribes
Duckwater Shoshone Tribe	Eastern Shoshone Tribe	Elko Band Council
Ely Shoshone Tribe	Fort Hall Shoshone-Bannock Tribe	Fort McDermitt Paiute-Shoshone
Goshute Indian Tribe	Hopi Tribe	Kaibab-Paiute Tribe
Las Vegas Paiute Tribal Council	Moapa Band of Paiutes	Navajo Nation
Northwestern Band of Shoshoni Tribe	Paiute Indian Tribe of Utah	Pueblo of Zuni
Pyramid Lake Paiute Tribe	Reno-Sparks Indian Colony	San Juan Southern Paiute Tribe
Skull Valley Band of Goshute Indians	South Fork Band Council	Te-Moak Tribal Council
Timbisha Shoshone Tribe	Ute Indian Tribe	Ute Mountain Ute Tribe
Washoe Tribe of Nevada-California	Western Shoshone Committee	Western Shoshone Defense Project
Wells Band Council	White Mesa Ute Council	Yerington Paiute Tribe
Yomba Shoshone Tribe		

During the public scoping meeting held in Elko, Nevada, a representative of the Te-Moak Tribe expressed concerns about sacred ancestral property under the proposed White Elk MOA. There was a concern that the noise and visual intrusions of aircraft overflights might interrupt religious ceremonies. Although all meetings were open to the public, one scoping meeting in West Wendover was held specifically to discuss any American Indian concerns. Three members of the Goshute Indian Reservation attended and expressed concerns about noise, safety (aircraft crashes), and overflights interfering with economic growth (the ability to bring jobs to the reservation).

The Navajo Nation is the only tribe of those listed in Table 3.10-1 that responded to the IICEP letters sent for the proposed White Elk MOA. The Navajo Nation concluded that the proposed MOA would not impact any Navajo traditional cultural properties or historical properties (Tony Joe 2007).

NEPA analyses separate the affected environment into discrete categories such as biological/natural, cultural and socioeconomic resources. American Indians' traditional values regarding land and the natural world encompass both tangible physical aspects and less apparent values, such as relationships and spirituality. They also look at whole landscapes and systems. The following discussion is divided into the standard NEPA categories.

Noise

The effects of noise on cultural resources may be related to setting. Noise impact to American Indian traditional cultural resources may be related to interference with ceremonies and other traditional activities at sacred sites. Undisturbed habitats, resources, and settings are considered to be critical to religious practices (NPS 1994). Potential impacts can be identified only through consultation with the affected groups.

Safety

Safety concerns associated with the White Elk MOA and overlying ATCAA that may affect American Indians include the use of chaff and flares during flights. Additionally, there could potentially be effects if any aircraft accidents occur in the airspace above any American Indian lands or traditional cultural resources.

Cultural Resources

Consultation with American Indian groups did not reveal any information about traditional cultural resources under the affected airspace. However, concerns were expressed regarding potential disruption of traditional ceremonies in the area underneath the proposed MOA.

Places that may be of cultural value to American Indian groups include, but are not limited to, locations associated with the traditional beliefs concerning tribal origins, cultural history, or the nature of the world; locations where religious practitioners go, either in the past or the present, to perform ceremonial activities based on traditional cultural rules or practices; ancestral habitation sites; trails; burial sites; and places from which plants, animals, minerals, and waters possessing healing powers or used for other subsistence purposes, may be taken.

Prehistoric archaeological sites are located under the affected airspace. These sites range from small temporary campsites, hunting stations, rock art sites, artifact scatters, quarries, and rockshelters to food collecting sites. The records search conducted as part of the background research for the Cultural Resources Section of this EIS, revealed the presence of one recorded cemetery said to contain American Indian burials of ranch workers. The cemetery was still in use when the site was recorded in 1973

(Bardwell and Van Zandt 1973). In the BLM Ely Planning Area, which encompasses White Pine and Lincoln Counties, and a small portion of Nye County, over 12,000 archaeological resources have been recorded while only 3.8 percent of the area has been surveyed. Although this is a larger area than the proposed White Elk MOA it provides an idea of the large amount of archaeological resources that are located under the airspace.

Potential American Indian traditional cultural properties were identified in the Ely Proposed Resource Management Plan by the BLM (BLM 2007b) in consultation with American Indian tribes. Those that fall under the airspace proposal are discussed below.

Spring Valley contains 24 sites, which include eight habitation sites, seven habitation/procurement/festival sites, one habitation/festival site, four habitation/procurement sites, one habitation/historical event site, one battle site, one procurement/festival site, and one procurement site. Antelope hunts; spring festivals, rabbit drives, and mud hen drives also took place in Spring Valley.

Antelope Valley contains nine sites that include three habitation/procurement sites, three habitation sites, one procurement site, one habitation/burial site, and one habitation/agricultural site. Seeds were procured in and around the valley and pine nuts from the foothills and slopes of the Goshute Range. Communal antelope drives took place in the northern foothills of the Kern Mountains. Communal rabbit drives took place west of Ibapah in Deep Creek Valley.

Steptoe Valley contains thirteen sites that include five habitation/procurement/festival sites, two festival/ceremonial sites, one burial/ceremonial site, one ceremonial site, three mythology sites, and one battle site. Pine nuts were gathered on both sides of the valley in the foothills and slopes of the Egan and Schell Creek Ranges. Rabbit drives were held in various places in the valley. Antelope drives were held at various locations in and near the valley. Deer were hunted individually and communally. Some crops were grown in Steptoe Valley.

The Egan Range contains three sites that include one habitation/ceremonial site, one ceremonial/historic event or battle site, and one ceremonial site.

The Pancake Range contains seven sites, which include one procurement site, four ceremonial sites, one burial site, and one mythological site.

Railroad Valley contains 23 sites, which include four habitation sites, one habitation/festival site, four habitation/procurement sites, three habitation/procurement/burial sites, four procurement sites, two ceremonial sites, one ceremonial/burial site, three burial sites, and one mythology site. Much of the subsistence and festival activity in central and northern Railroad Valley was centered around a fertile area with ample water from mountain runoff and flowing streams. People came from surrounding areas to

gather sunflower and redtop grass seeds. Rabbit drives were held about 15 miles south of the fertile area in the valley flat and near Blue Eagle Spring. People from northern Railroad Valley (Hamilton area) went to the Duckwater area in the fall for rabbit drives and associated festivals.

Pine nuts were gathered in the White Pine Mountains or northeast of Currant Creek, possibly near White Pine Peak. The Pancake Mountains west and south of the Duckwater area were known as a good place for pine nut gathering. Western Shoshone hunted in Railroad Valley between the Pancake and Quinn Canyon ranges. In the spring, antelope drives were held in a low pass in the northern end of Railroad Valley. The Duckwater area was the locale for the main festivals in Railroad Valley. Participants came from the Hamilton, Currant Creek, Warm Spring, and sometimes Nyala, and Hot Creek areas.

The White River Valley contains seven sites, which include two burial sites, one habitation/procurement site, one procurement/festival/ceremonial site one mythological site, and one battle site.

Butte Valley and Clover Valley each contain one procurement site.

Natural Resources

The lands under the proposed White Elk MOA and overlying Currie/Tippet ATCAA lie within the Northeastern Great Basin. American Indian groups have expressed concerns regarding potential impacts to plants and animals whose habitats lie under the affected airspace in this area of the Great Basin.

The Great Basin is distinguished by the presence of distinctive native shrub communities, dominated by the different varieties and species of sagebrush such as black sagebrush (*Artemisia nova*), Wyoming big (*Artemisia tridentata ssp. wyomingensis*), mountain big (*Artemisia tridentata ssp. vaseyana*), and big sagebrush (*Artemisia tridentata*). Native perennial bunchgrasses such as bluebunch wheatgrass (*Pseudoroegneria spicata*), bottlebrush squirreltail (*Elymus elymoides*), Indian ricegrass (*Oryzopsis hymenoides*), and Great Basin wildrye (*Elymus cinereus*) have been replaced by invasive annual species such as cheatgrass (*Bromus tectorum*). These vegetation communities are products of the various natural and human-related disturbances and environmental factors occurring during the past 200 years in which livestock grazing has increased and the frequency of fires has decreased (Tausch 1993).

Aspen, Pinyon-juniper, and mountain mahogany woodlands are also found. Single leaf pinyon (*Pinus monophylla*) and/or Utah juniper (*Juniperus osteosperma*) dominate the Pinyon-juniper woodlands. Aspen plant communities generally occur as small stands in isolated pockets mainly on northern and eastern slopes at higher elevations on the mountains (BLM 2007b).

Wildlife in the Great Basin includes species that are primarily associated with Great Basin (BLM 2007b) montane scrub and pinyon-juniper woodland and occur or are likely to occur under the proposed airspace.

The larger mammal species include Rocky Mountain elk, pronghorn antelope (*Antilocapra americana*), and bighorn sheep (*Ovis Canadensis*). At higher elevations, small springs and seeps provide limited watering facilities for domestic livestock (cow, sheep and lambs, horses and ponies). In addition, the rougher, more densely vegetated regions in the higher elevations also support mountain lion (*Puma concolor*), bobcat (*Felis rufus*), mountain goat (*Oreamnos americanus*), and mule deer (*Odocoileus hemionus*). Beaver, muskrat, coyote, red fox, gray fox, and kit fox can also be found. The small mammal species include the pygmy rabbit (*Brachylagus idahoensis*), cottontail rabbit, and a variety of shrews, bats, ground squirrels, woodrats, and mice (BLM 2007b). Typical reptile species include the Great Basin rattlesnake (*Crotalus viridis lotus*), western fence lizard (*Sceloporous occidentalis*), and the greater and pygmy short-horned lizards (NDOW 2008).

Wild horses and burros may be found on the lands under the proposed airspace. Efforts have been implemented to remove wild horses from private lands in and return them to one of four herd management areas in Elko County (BLM 1993) and two in White Pine County (BLM 2007b). Wild horses and burros are protected by PL 92-195, the Wild Free-Roaming Horse and Burro Act of 1971, as amended.

Birds typical of the northeastern Nevada region and may be found in affected region include quail, hummingbirds, and woodpeckers. Species include the greater sage-grouse (*Centrocercus urophasianus*), great horned owl (*Bubo virginianus*), and belted kingfisher (*Megaceryle alcyon*). The Eurasian collared dove (*Streptopelia decaocto*) is a new species in the state. Large raptor populations migrate late summer to early fall along the Goshute Mountain Range at about 9,000 feet elevation (HWI 2007). Raptors regularly observed in the region include red-shouldered hawk (*Buteo lineatus*), ferruginous hawk (*Buteo regalis*), Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), American kestrel (*Falco sparverius*), and peregrine falcon (*Falco peregrines*) (HWI 2007). Common waterfowl include mallard, green-winged teal, Canada geese, and a variety of diving ducks (BLM 2007b).

Aquatic habitat found under the airspace support both game and native nongame species for at least a portion of the year. Cold water trout species include rainbow, German brown, brook, rainbow cutthroat hybrid, and Bonneville cutthroat (BLM 2007b). Warm water game fish include largemouth bass and northern pike (BLM 2007b, White Pine County 2006). Native non-game species include sucker, minnow, and killifish. See Section 3.6 for more information.

Socioeconomics

The Te-Moak Tribe of Western Shoshone Indians of Nevada is a coalition government with headquarters in Elko, Nevada, serving four distinct Shoshone reservations/colonies in Nevada: 1) the main reservation—South Fork Indian Reservation (includes Odgers Ranch and Ruby Valley allotments), 2) Battle Mountain

Colony, 3) Elko Colony, and 4) Wells Colony. The Te-Moak Tribal Council has total jurisdiction over all tribal lands, though the colonies retain sovereignty over all the other affairs, and each has its own separate governing council. The Te-Moak Tribe's constitution and by-laws were adopted and approved in 1938 and amended in 1982 (personal communication, Puhuyoama 2008).

Of the four Te-Moak reservations/colonies, only the South Fork Indian Reservation is located in the vicinity of the proposed MOA. The main South Fork Reservation and the Ruby Valley allotments are located northwest of the proposed White Elk MOA. However, Odgers Ranch reservation lands are located within the lands beneath the affected airspace. Little information is available on this satellite reservation. It has a small population of approximately 30 tribal members.

The main South Fork Reservation at Lee, Nevada has a population of 75 with tribal enrollment at 260 members spread throughout the main reservation, the Ruby Valley allotments, and Odgers Ranch. Of these 260, only 158 are part of the labor force and the per capita income is \$6,680. Forty-four percent of the members of this tribe have a high school education or higher. The South Fork Band currently has 2,800 acres under cultivation, which is primarily hay and is used for consumption by its livestock herd. This herd numbers over 700 head, primarily of cattle with some horses. The most significant source of tribal income is federal contracts; the second is cattle-raising (Te-Moak Tribe 2008). During the public meetings for the White Elk MOA, concerns were expressed for the well-being of grazing livestock under the affected airspace.

Ely Indian Colony is a population of 85 people on 100.32 acres of tribally owned land. The small size of this colony makes commercial enterprises such as ranching impractical. Tribal members practice some traditional crafts such as making purses, bags, and other fabric containers and an arts and craft outlet is currently being developed to promote this industry. Additional sources of tribal income include a day care center, health clinic, and combination laundromat/smokeshop. There is a labor force of 17 with 100 percent high school educated or higher. Per capita income is \$4,819. Economic development projects underway include a recreational vehicle park, a 20-40 unit luxury apartment complex, gas station, and the arts and craft outlet mentioned above (Economic Development Administration 2007).

The Confederate Tribes of the Goshute Reservation had a population of 86 people in 2006. Tribal enrollment was 66. Major employers for tribal members included mining, leisure and hospitality, and other services. Between 1980 and 2002 there was an increase in labor force participation among the Goshute. Median household income on the Confederate Tribes of the Goshute Reservation is considerably lower than the State of Utah. In 1999 the median household income for Utah was \$45,726 and for the reservation it was only \$19,063. The percentage of families and individuals living below federal poverty guidelines is higher on the reservation than in the State of Utah. In Utah, 9.4 percent of the population lives below federal poverty guidelines and on the reservation 37.14 percent of the population lives below federal poverty guidelines.

4.0 ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 presents an assessment of the potential environmental consequences of the proposed action and no-action alternative. To define the potential consequences, this chapter overlays the components of the proposed action described in Chapter 2 onto the affected environment described in Chapter 3. Each of the environmental resources described in Chapter 3 is affected to a different degree and has a different method of analysis. Cumulative effects of the proposed action with other past, present, and foreseeable future actions are presented in Chapter 5. Irreversible and irretrievable effects are also discussed in Chapter 5.

4.2 AIRSPACE AND AIRCRAFT OPERATIONS

This assessment of airspace use and management examines how the proposed action and no-action alternatives would affect air traffic west of the UTTR in northeastern Nevada over portions of White Pine and Elko Counties. Establishment of additional airspace would permit sortie-operations throughout the White Elk MOA and increased sortie-operations in the overlying Currie/Tippet ATCAA. Chaff and flares would be used in the MOA/ATCAA and supersonic flight in the ATCAA would be permitted.

In addition to the F-16s from the 388 FW, the same inventory of transient aircraft that utilize the current airspace can be expected to operate within the new White Elk MOA and overlying ATCAA. The majority of these transient sortie-operations would occur during the day at subsonic speeds and altitudes at or above 24,000 feet MSL. Average duration of training missions without refueling would range between 20 and 30 minutes.

4.2.1 Proposed Action

Airspace

The proposed action activities would not alter the current structure of UTTR restricted areas, or the structure of the existing MOAs. The White Elk MOA would overlay 1,674 square nm to the west of the Gandy MOA and underlie all but the southwestern portion of the Currie/Tippet ATCAA covering 1,993 square nm. The addition of the White Elk MOA would increase the total volume of UTTR airspace by approximately 1.4 percent. As linked assets, the MOA/ATCAA would be used by Hill AFB F-16s when priority test and evaluation activities restrict training. Hill AFB would continue to coordinate with the FAA regarding use of the ATCAA.

The three MTRs which lie partially beneath the proposed White Elk MOA airspace (IR-234/235, IR-293, VR-1259) are not often used in conjunction with UTTR activities. Similarly, the use of these would likely continue at the present rate because the training activities associated with these MTRs are independent from the proposed use of the White Elk MOA. This airspace proposal would not impact the use of the MTRs.

Military Aircraft Operations

In 2007, 548 sortie-operations were conducted in the Currie/Tippet ATCAA. Under the proposed action, a total of 9,590 sortie-operations would be conducted annually in the MOA/ATCAA airspace representing a 571 percent increase over baseline. Sortie-operations in the remainder of the UTTR would remain unchanged. The mission profiles in the MOA/ATCAA would be similar to those flown in the UTTR MOAs, which is air-to-air combat training and staging for range battlefield operations.

For mission accomplishment, the proposed action includes supersonic airspeeds from 18,000 to 58,000 feet MSL within the existing Currie/Tippet ATCAA. Forecasts estimate training aircraft would fly supersonic the same percentage as currently, approximately 20 percent of the time. Supersonic training would create approximately 296 sonic booms per month in the Currie/Tippet ATCAA.

Refueling tankers would provide additional support to F-16s in the Currie/Tippet ATCAA. In 2007, refueling tankers flew 136 refueling operations on AR-659. This number would increase 83 percent to about 780 refueling operations each year.

The 388 FW proposes to use R-188 training chaff and M-206 flares in the MOA/ATCAA airspace. These defensive countermeasures would be employed in accordance with current Air Force, ACC, and Hill AFB regulations. Flare use has no impact on airspace management issues. The training chaff dispensed in response to air or ground-based threats does not interfere with FAA radar tracking systems. Projected deployment of chaff bundles within the MOA/ATCAA airspace is 40,700 annually; about 31,630 flares would be deployed annually. Coordination between the 388 FW and FAA would let the ARTCC know that military aircraft were training with chaff and flares in the airspace; no airspace management impacts would be expected.

Civilian Aircraft Operations

As discussed in section 3.2.2, civil air traffic operations on the federal airways and jet routes, and above those highways commonly used as visual references by VFR aircraft are sufficiently clear of and unaffected by the proposed White Elk MOA operations. No public airports or airfields underlie the proposed MOA airspace. One small civil airport, Ely, lies approximately 15 miles south of the proposed MOA, and would not be impacted by the MOA operations that would occur at or above 14,000 feet MSL.

The proposed action would have little impact on civil and commercial aviation airspace use because the proposed White Elk MOA avoids most high-level jet routes in the area. Only one route, J-56, transects the existing Currie/Tippet ATCAA, and the subdivisions of the ATCAA allow training operations to continue in other subdivisions without interfering with this route.

The proposed action would not adversely affect future commercial and general aviation growth in Nevada or Utah because pilots would continue to follow the same flight parameters. Ongoing interaction between Hill AFB and state and federal agencies would help ensure continued compatibility of military and commercial/civil aviation in the affected environment of Hill AFB and UTTR airspace. The White Elk MOA would be under Clover Control radar coverage, and it would assist general aviation traffic through this area, promoting flight safety over current levels. In summary, there would be no significant adverse impacts to civilian aircraft operations in the regional airspace if the proposed action were implemented.

Glider Operations

Gliders operating in the Great Basin area may be affected, but not significantly impacted by the White Elk MOA. Although gliders tend to operate at altitudes at the lower end of the spectrum of the proposed MOA/ATCAA, a few thousand feet of overlap could occur. There is no restriction against a glider operating VFR in these areas; however, a pilot should be alert since training activities may include acrobatic and abrupt maneuvers. MOAs are depicted on aeronautical charts and hours of use are available to general aviation users and should be checked for activity during preflight. Similarly, pilots operating in the proposed MOA/ATCAA would be made aware to the degree feasible, that glider activity may occur in the area. See-and-avoid procedures would prevail. Furthermore, Hill AFB airspace managers would:

- Plan to not schedule use of the MOA during “Glider Week;”
- Establish a NOTAM warning of glider activity; and
- Continue to offer to inform the glider community about procedures and safety in the airspace.

To assist the glider community, information regarding training activities in the MOA/ATCAA would be provided by contacting the Hill AFB Range Scheduling Office at (801) 777-9386 for same day activities or (801) 777-9385 for future activities. The White Elk MOA would be under Clover Control radar coverage which would assist gliders with the ability to communicate through this area, enhancing flight safety. In summary, there would be no significant adverse impacts to glider operations in the regional airspace if the proposed action were implemented.

4.2.2 No-Action Alternative

Under this alternative, no change in baseline conditions would occur and thus no adverse impacts would be expected. The 388 FW would continue to conduct F-16 flight training in the Currie/Tippet ATCAA as permitted under the letter of agreement. Annual sortie-operations in the ATCAA would likely continue at

the present rate. Chaff and flares would not be employed in the airspace and supersonic activities in the ATCAA would not be authorized. The structure and management of UTTR Restricted Areas, MOAs, and ATCAAs would continue to provide limited use to the 388 FW.

4.3 NOISE

This analysis quantifies noise impacts under and near the proposed White Elk MOA and Currie/Tippet ATCAA by comparing baseline and projected DNL levels at 20 points of interest including towns, Indian reservations, and wilderness and recreation areas. However, identifying the level of impacts requires identification of affected areas as well as land uses. According to the Federal Interagency Committee on Urban Noise, noise exposure greater than 65 DNL is considered generally incompatible over residential, public use (i.e., schools), or recreational and entertainment areas. This section evaluates the noise generated from the proposed action and its potential effects to the noise environ. Section 4.5 (Land Use) evaluates the effects of noise on surrounding land ownership or land status, population, general land use patterns, land management plans, and special use areas. Section 4.6 (Natural Resources) examines impacts to wildlife from aircraft noise.

As noted in Section 4.2, F-16 aircraft would operate within the proposed MOA and the overlying ATCAA and perform the same type of combat training missions as they do in the UTTR airspace. Supersonic flight would be authorized in the Currie/Tippet ATCAA. The projected total activity would increase to a maximum of 9,590 annual sorties with approximately 20 percent of most of the F-16 sortie missions resulting in a supersonic event. Other aircraft, such as the F-22, F-15, and F-18 would account for a lesser percentage of sorties in the area. The noise analysis accounts for both subsonic noise and sonic booms from supersonic flight. Subsonic noise is quantified by DNL. The cumulative sonic boom environment is quantified by CDNL and by the number of booms per month that would be heard under the proposed MOA and Currie/Tippet ATCAA.

4.3.1 Proposed Action

The noise metrics used in this section are described in Section 3.3 and Appendix F. Annoyance, which is based on perception, represents the primary effect associated with aircraft noise. Attitudinal surveys conducted over the past 30 years show a consistent relationship between DNL and the percentages of groups of people who express various degrees of annoyance. Studies of community annoyance to numerous types of environmental noise show that DNL correlates well with effects, and Schultz (1978) showed a consistent relationship between noise levels and annoyance. That Schultz study has been periodically re-examined and reaffirmed. The updated relationship by Finegold *et al.* (1994), which does not differ substantially from the original, is the current preferred form, and is shown in Table 4.3-1. Also shown in Table 4.3-1 is the equivalent relation between annoyance and CDNL from sonic booms (CHABA 1981).

Table 4.3-1 Relation Between Annoyance, DNL, and CDNL		
<i>DNL</i>	<i>% Highly Annoyed</i>	<i>CDNL</i>
45	0.83	42
50	1.66	46
55	3.31	51
60	6.48	56
65	12.29	60
70	22.10	65

The range of DNL shown in Table 4.3-1 is used to identify appropriate land uses. The USEPA has identified DNL of 55 dB as a level that protects public health and welfare with an adequate margin of safety (USEPA 1972). This means that 55 dB is a threshold below which adverse noise effects are usually not expected to occur. DNL 65 dB is widely used as a noise criterion for airports. It represents a compromise between acceptable noise and economic practicality. However, residential use above DNL 65 dB is generally considered to be compatible only if the dwellings are sound insulated. The proposed action would not generate levels above DNL 65 dB.

In rural and wilderness areas, the analysis of effects is vastly different compared to areas near population centers. In these special areas, public concerns can include effects to wildlife, domestic animals, natural soundscapes, and outdoor recreation. Each of these effects can be difficult to assess because of limited research. Many studies have been conducted on noise impacts to animals. However, if the animal of concern has not been included in any of these studies, biological expertise is required to determine if additional research is required or a surrogate animal can be used for the assessment of impacts. See Section 4.6 for a discussion of noise impacts to wildlife.

For assessing noise impacts to natural soundscapes and outdoor recreation, no standard methodology exists for determining impacts. As such, the recommended approach is to describe the noise environment in detail using supplemental metrics such as Sound Exposure Level, Number of Events Above, and Time Above. These metrics could be used to describe the expected level of noise intrusions occurring under different levels of proposed military activities in the area of concern. When there is no clear definition for assessing impact, supplemental metrics provide a good characterization of the expected noise environment to both the public and the decision maker.

Subsonic Noise

Refer to Table 3.3-2 for subsonic SELs of several aircraft at various altitudes. SEL noise levels of most aircraft are highest at altitudes below 5,000 feet AGL. Given that most proposed use of the White Elk MOA would occur above 5,000 feet AGL (except at the highest mountain peaks), the proposed action would not significantly increase low-altitude overflights and accompanying noise.

An assessment of noise impacts at 20 points of interest indicated that subsonic noise levels for the area under and near the proposed White Elk MOA and overlying ATCAA would not increase perceptibly.

The human ear generally can distinguish a 3 dB change in noise levels. Although slight changes in noise levels would occur, these would continue to remain below 45 DNL (Table 4.3-2). As previously discussed, all of the areas under the proposed MOA and overlying ATCAA have low population densities. Under this proposal, approximately 1 to 3.3 percent of the population would be expected to be highly annoyed.

Table 4.3-2 Baseline and Projected Subsonic Noise Levels for the Locations Under the Proposed White Elk MOA and Currie/Tippet ATCAA						
<i>Noise Point</i>	<i>Name</i>	<i>Elevation (feet MSL)</i>	<i>Altitude of ATCAA Floor above ground level (AGL)</i>	<i>Altitude of Proposed MOA Floor above ground level (AGL)</i>	<i>Baseline Noise Levels (L_{dnmr})</i>	<i>Projected Noise Levels (L_{dnmr})</i>
<i>Under Existing ATCAA and Proposed MOA</i>						
1	Bassett Lake	6,042	11,958	7,958	<45	<45
2	Currie	5,801	12,199	8,199	<45	<45
3	McGill	6,250	11,750	7,750	<45	<45
4	Steptoe	5,988	12,012	8,012	<45	<45
<i>Under Existing ATCAA</i>						
5	Becky Peak Wilderness	9,993	8,007	4,007	<45	<45
6	Cherry Creek	6,131	11,869	7,869	<45	<45
7	Goshute Canyon Wilderness	7,874	10,126	6,126	<45	<45
8	Goshute Canyon Wilderness Study Area	7,054	10,946	6,946	<45	<45
9	Lages Station	5,971	12,029	8,029	<45	<45
10	Stone House	6,280	11,720	7,720	<45	<45
<i>Outside All Airspace</i>						
11	Ely, NV	6,427	11,573	7,573	<45	<45
12	Goshute Indian Reservation	6,070	11,930	7,930	<45	<45
13	Humboldt National Forest (Green Mountain)	10,680	7,320	3,320	<45	<45
14	Ruby Lake National Wildlife Refuge	5,962	12,038	8,038	<45	<45
15	Schell Creek Range (Cooper Summit)	9,380	8,620	4,620	<45	<45
16	Snow Water Lake	5,590	12,410	8,410	<45	<45
17	South Fork Indian Reservation	6,000	12,000	8,000	<45	<45
18	South Fork State Recreation Area	5,220	12,780	8,780	<45	<45
19	West Wendover, NV	4,255	13,745	9,745	<45	<45
20	Elko, NV	5,070	12,930	8,930	<45	<45

In summary, it is anticipated that there would be no perceptible increase to the subsonic noise levels to areas under or near the proposed White Elk MOA and overlying Currie/Tippet ATCAA. The number of complaints received by the base and level of annoyance experienced by these communities and residents underlying the proposed airspace and activities should not increase due to subsonic operations. No adverse impacts to hearing and health would be anticipated.

Supersonic Noise

Supersonic operations would be permitted in the Currie/Tippet ATCAA at altitudes above 18,000 MSL. The Air Force estimates that during air combat maneuvering, the F-16 would fly supersonic approximately 3.5 percent of the time. In addition, 75 percent of all supersonic F-16 activity would be above 30,000 feet MSL where sonic booms have the least probability of reaching the ground. Calculations of supersonic noise reflect the number of aircraft operations performed in supersonic mode, not total sortie-operations. For the F-16s, which represent 95 percent of the flight activity in the MOA/ATCAA, 1,472 annual supersonic sorties are projected. This amount comprises 20 percent of all F-16 sorties. Tables 4.3-3 and 4.3-4 present the projected CDNL and sonic booms for locations under and near the MOA and Currie/Tippet ATCAA.

Figure 4.3-1 shows the CDNL contours in the airspace resulting from proposed annual supersonic events. The net sonic boom environment in the center of the ATCAA airspace would be approximately CDNL 49 dB. On average, one sonic boom would be heard about once every two flying days in the center of the airspace. There would be correspondingly fewer booms at the boundary than toward the center of the airspace under the proposed action due to the nature of the training engagements (refer to Figure 2-5).

Table 4.3-3 Baseline and Proposed Supersonic Noise Levels for the Locations Under the Proposed White Elk MOA and Currie/Tippet ATCAA						
<i>Noise Point</i>	<i>Name</i>	<i>Elevation (feet MSL)</i>	<i>Altitude of ATCAA Floor above ground level (AGL)</i>	<i>Altitude of Proposed MOA Floor above ground level (AGL)</i>	<i>Baseline Noise Levels (CDNL)</i>	<i>Projected Noise Levels (CDNL)</i>
<i>Under Existing ATCAA and Proposed MOA</i>						
1	Bassett Lake	6,042	11,958	7,958	0	42
2	Currie	5,801	12,199	8,199	0	48
3	McGill	6,250	11,750	7,750	0	42
4	Steptoe	5,988	12,012	8,012	0	44
<i>Under Existing ATCAA</i>						
5	Becky Peak Wilderness	9,993	8,007	4,007	0	47
6	Cherry Creek	6,131	11,869	7,869	0	49
7	Goshute Canyon Wilderness	7,874	10,126	6,126	0	49
8	Goshute Canyon Wilderness Study Area	7,054	10,946	6,946	0	49
9	Lages Station	5,971	12,029	8,029	0	47
10	Stone House	6,280	11,720	7,720	0	45

Table 4.3-3 Baseline and Proposed Supersonic Noise Levels for the Locations Under the Proposed White Elk MOA and Currie/Tippet ATCAA (con't)

Noise Point	Name	Elevation (feet MSL)	Altitude of ATCAA Floor above ground level (AGL)	Altitude of Proposed MOA Floor above ground level (AGL)	Baseline Noise Levels (CDNL)	Projected Noise Levels (CDNL)
<i>Outside All Airspace</i>						
11	Ely, NV	6,427	11,573	7,573	0	<42
12	Goshute Indian Reservation	6,070	11,930	7,930	0	<42
13	Humboldt National Forest (Green Mountain)	10,680	7,320	3,320	0	<42
14	Ruby Lake National Wildlife Refuge	5,962	12,038	8,038	0	<42
15	Schell Creek Range (Cooper Summit)	9,380	8,620	4,620	0	0
16	Snow Water Lake	5,590	12,410	8,410	0	<42
17	South Fork Indian Reservation	6,000	12,000	8,000	0	<42
18	South Fork State Recreation Area	5,220	12,780	8,780	0	0
19	West Wendover, NV	4,255	13,745	9,745	0	0
20	Elko, NV	5,070	12,930	8,930	0	0

Table 4.3-4 Sonic Boom Frequency Under the Proposed White Elk MOA and Currie/Tippet ATCAA

Aircraft	Supersonic Sorties per month		Average Booms per Sortie ²	Monthly Booms			
	Day	Night		Day	Night	Events >30,000 feet	Events <30,000 feet
F-16	116.6	6.1	2.3	268.0	14.1	211.5	70.5
F-15	0.3	0.0	1.5	0.3	0.0	0.3	0.0
F-22	1.4	0.1	6	5.8	0.3	6.1	0.0
Other ¹	4.4	0.3	1.5	7.5	0.4	4.0	4.0
Total	122.7	6.5		281.6	14.8	221.9	74.5

Notes:

¹Includes F-18 and other transient fighter aircraft.

²Average booms per sortie differs slightly (+ 0 -) from maximum supersonic events per sortie due to mission variability and modeling parameters. For example, F-15s would perform a total of 3 supersonic events per year. This minimal amount of activity and the fact that all would occur above 30,000 feet MSL result in no predicted sonic booms.

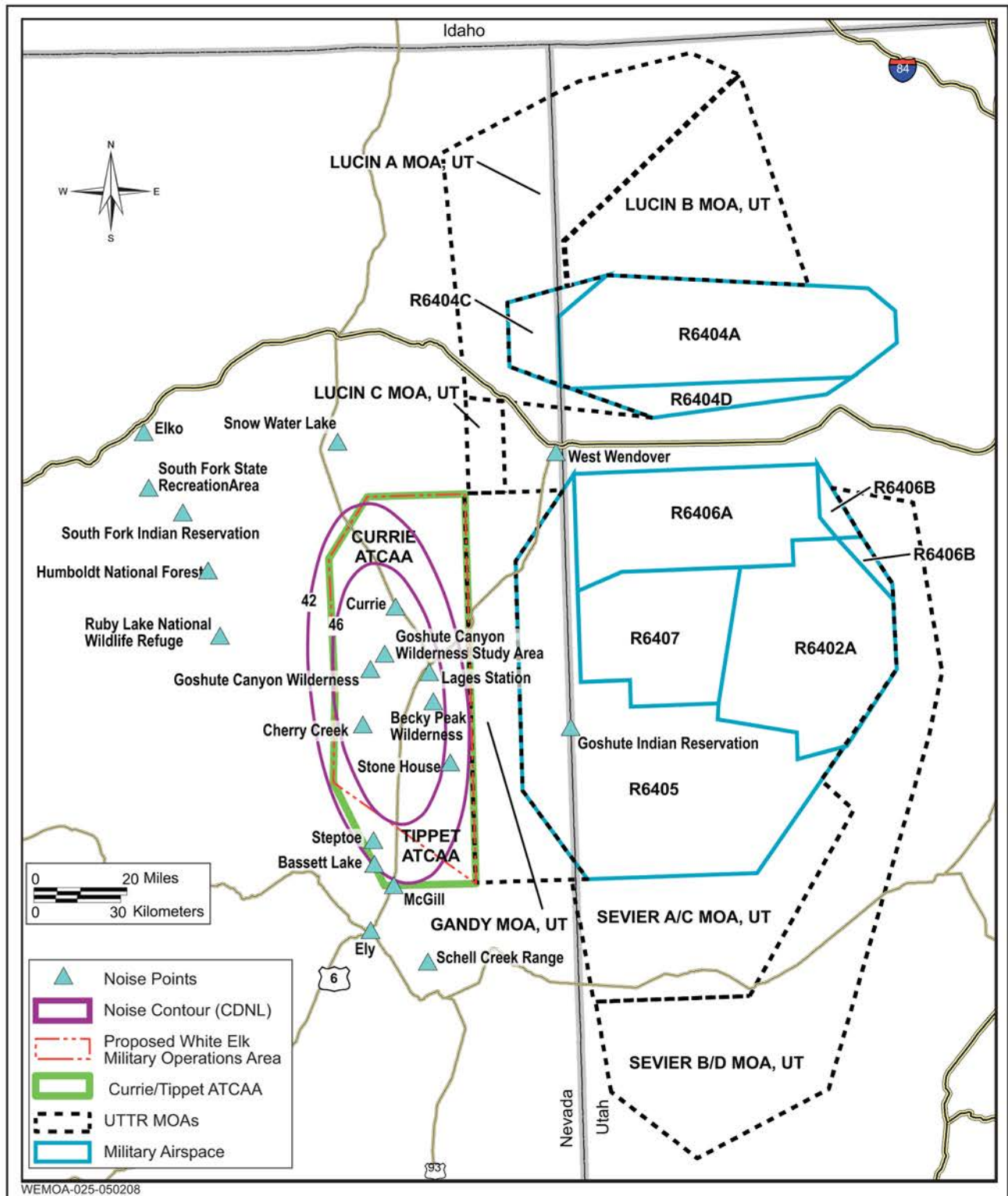


Figure 4.3-1 Projected Supersonic Noise Levels (CDNL)

Under the proposed action, supersonic noise levels would increase to between 45 and 49 CDNL. Noise levels less than 45 CDNL are difficult to accurately measure and would not be perceptibly different from baseline conditions. Of the 20 noise analysis locations, thirteen would experience CDNL values of less than 45 dB. Table 4.3-3 shows that all supersonic noise levels would remain below 49 CDNL with annoyance comparable to a subsonic noise DNL of about 53 dB. These levels do not exceed the standard identified by USEPA as protective of public health. From Table 4.3-1, 3.31 percent of sampled populations were highly annoyed at the DNL 55 dB level, so fewer (i.e., greater than DNL 55 dB) individuals, especially toward the center of the airspace may be annoyed by the lower noise levels.

Sonic booms, which do not currently occur in the area, would occur at an average of 10 per day somewhere within the whole area. Not all booms would reach the ground and about one sonic boom would be heard every two flying days at the center of the airspace. Audible booms would be more common near the center of the airspace than at the periphery. The introduction of sonic booms from supersonic activity would be noticeable and can be intrusive. Although the “startle effect” of sonic booms is annoying, studies have been performed on the effect of sonic booms on various tasks, including driving, and they have found that there is generally little or no adverse effect (Lips 1972; Nowakiwsky 1974).

The potential for sonic booms to damage structures is extremely small, but is a concern nonetheless. Direct effects are best quantified by the peak overpressures of individual booms. At 1 pound per square foot (psf), the probability of a window breaking ranges from one in a billion (Sutherland 1990) to one in a million (Hershey and Higgins 1976). At 10 psf, the probability of breakage is between one in a hundred and one in a thousand (Haber and Nakaki 1989). Damage to plaster is in a comparable range but depends on the condition of the plaster. Adobe faces small risks similar to plaster, but assessment is complicated by adobe structures being exposed to weather, where they can deteriorate in the absence of any specific loads (Sutherland 1990). Similarly, other outdoor structures such as buildings, windmills, radio towers, etc., are resilient and routinely subject to wind loads far in excess of sonic boom pressures. Foundations and retaining walls, which are intended to support substantive earth loads, are not at risk from sonic booms. Appendix F and Section 3.7 contain tables of sonic boom risk to a variety of structures.

The average peak overpressure under this proposal is under 1psf with a small probability of booms exceeding 6 or 7 psf. Sonic booms under the proposed action are not expected to damage most structures such as ranches and outbuildings, although damage to deteriorated structures may occur. The Air Force follows established procedures for claims against the government in cases where damage is claimed to result from sonic booms.

In summary, under the proposed action, subsonic noise would not change perceptibly. The increase in supersonic noise could cause an increase in the number of complaints received and result in an increase in the number of people (an approximate change from 1 to 3.3 percent) highly annoyed by supersonic

activities. However, while there would be an increase in supersonic noise, no adverse impacts to hearing or health would occur.

4.3.2 No-Action Alternative

Under the no-action alternative, noise levels would remain the same as the baseline or existing conditions. No supersonic events would occur in the area from air combat training in the Currie/Tippet ATCAA and no sonic booms would occur in the area either under or in the vicinity of the proposed White Elk MOA.

4.4 SAFETY

Ground, fire, and crash safety are assessed for the potential to increase risk. The 75 ABW capabilities to manage risk by responding to emergencies are described. Analysis of flight risks correlates Class A mishap rates and bird-aircraft strike hazards (BASH) with projected airspace utilization. The magnitudes of any safety consequences are presented.

4.4.1 Proposed Action

Ground Safety

Under the proposed action, the operations and maintenance procedures conducted by 388 FW and 75 ABW personnel would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulations, technical orders, and AFOSH standards. There are no aspects of the proposed action that would be expected to create new or unique ground safety issues. Any ground safety emergency that involves a life-flight transporting time-critical patients or donated organs receive priority status through any airspace unit when the pilot provides a call sign to the air traffic controller. FAA Order 7110.65 states that operational priority is given to civilian air ambulance flights when verbally requested. Priority to life-flight status would not change with implementing the proposed action; military training in the affected airspace would be stopped during such an event. Operations within the proposed MOA are not expected to create any ground safety issues.

Crash Response

Capability for crash response is located at the Hill AFB (75 Air Base Wing [ABW]) and these capabilities would continue in effect for this airspace proposal. BLM would implement procedures for incidents that take place on BLM-managed lands in accordance with applicable regulations.

Fire Risk and Management

The land area under the proposed White Elk MOA airspace would be covered under the fire management mutual aid agreements and BLM RMPs and Fire Management Plans listed in section 3.4.1. The Air Force would inform the appropriate agencies for response to flare-related fires. Implementation of the fire management plans and practices would greatly reduce the extent of fire from flares; therefore, no significant impacts would be expected from implementation of the proposed action.

Capability for fire response is located on Hill AFB and the UTTR. The Hill AFB (75 ABW) fire department is party to mutual aid support agreements with the nearby communities of Wendover, Tooele County, and BLM (Air Force 2007a). All of these capabilities would remain in effect.

Chaff and Flares

Chaff

RR-188 training chaff would be the only type of chaff authorized for use in the White Elk MOA and Currie/Tippet ATCAA. This type of training chaff has dipole fibers removed thereby eliminating interference with FAA radar tracking systems and has been approved for use by the FAA. Therefore, potential safety issues related to aircraft and FAA tracking systems are not anticipated.

Safety issues to people underneath or immediately adjacent to the proposed MOA and overlying ATCAA would emanate from the probability of chaff residual material striking an individual on the ground. Data on this issue are difficult to obtain; however, there have been no reports of any person being injured from falling chaff residual material. Chaff residual material consists of a 1-inch square plastic piece only 1/8-inch thick. The individual end cap weighs approximately 0.114 ounces. Previous analysis indicate that if a person on the ground was hit by an ejected end cap, the impulse impact would be 0.003 pound-seconds; the impulse impact required to cause brain injury is 0.10 pound-seconds (Air Force 1997). Therefore, the safety risk to people under or adjacent to the MOAs in which chaff is dispensed would be minimal if the proposed action were implemented.

Safety risks to aircrews and personnel from handling or discharging of chaff would be minimal. The 10-year mishap record for chaff at Air Force installations is low (Air Force 1997) and all chaff maintenance, handling, storage, and operations are performed by qualified personnel who are required to follow detailed procedures as outlined in Air Force Technical Orders and Air Force Occupational and Environmental Safety, Fire Protection, and Health directives. The historic record of chaff mishaps and the handling of this material by trained personnel support the conclusion that there would be minimal safety risks to aircrew and personnel from chaff if the proposed action were implemented.

Currently, expenditure of training chaff is not authorized in the existing ATCAA or proposed MOA airspace. HQ ACC maintains an authorization to use training chaff (RR-188) in the continental U.S. (personal communication, Riedell 2008). Hill AFB would receive authorization to use training chaff in the White Elk MOA and Currie/Tippet ATCAA should a record of decision on the EIS approve its use under this proposal.

Flares

Under this proposal, flares would be dispensed in the MOA/ATCAA during training operations. The flares are magnesium pellets wrapped with aluminum-filament-reinforced tape, inserted into an aluminum case closed with a felt spacer and end cap. Activated by a pyrotechnic charge that forces the flare from the flare dispenser mounted within the aircraft, the activated flare burns for a period of 3.5 to 5 seconds at approximately 2,000 degrees Fahrenheit. Flares are designed to burn out completely within 325 feet after release. After activation, the end cap and piston of the flare falls to the ground. The end cap weighs approximately 0.16 ounces, creating the potential to generate an impact momentum of 0.010 pound-seconds (Air Force 1997). If an end cap struck a person on the ground, the momentum generated would be far below that required to cause serious injury. Therefore, safety risks related to flare residual material would be negligible under the proposed action.

Flares consist of magnesium and Teflon pellets that burn rapidly and completely after being dispensed; they have a greater than 99 percent reliability rate for discharging and burning as designed based on individual events. On extremely rare occasions, however, a flare may not ignite and fall to the earth as a dud flare. A dud flare could seriously injure a person if he or she is either struck by the falling dud and/or a dud flare is discovered by a person and mishandled. Previous analysis has determined the probability of a dud flare striking a person on the ground is correlated with population density (Air Force 1997). To reduce the risk of flares striking a person on the ground, flares would not be released over established communities beneath the airspace. Dud flares may be mishandled if discovered on non-DoD lands by the uninformed public. As noted under the proposed action, Hill AFB would initiate a public information campaign to inform the public about the hazards of dud flare discovery and the procedures for reporting such findings. Safety risks from dud flares, therefore, would be minimized given these informational efforts and the low probability of such occurrences if the proposed action were implemented.

AFI 11-214 (22 December 2005) prescribes a minimum flare release altitude of 2,000 feet AGL over non-government-owned or controlled property minimizing the risk of flare-caused fires. Under the proposed action, flares would not be released at less than 14,000 feet MSL or higher (i.e., 3,100 to 8,500 feet AGL or higher) in the White Elk MOA, providing a significant buffer. Therefore, the potential to ignite a fire from flares would be extremely remote. Additionally, many of the peaks under the proposed MOA are above the tree line and would present little fuel for hot flares that may potentially not burn out. To reduce the risk of fires, F-16 pilots from Hill AFB would not deploy flares under high fire conditions as defined

by the National Weather Service using the National Fire Danger Rating System. In addition, the Air Force would inform local fire departments in dud flare handling procedures and would cooperate with local agencies for response to flare-related fires. Implementation of these management practices would greatly reduce the risk of fire from flares; therefore no significant impacts would be expected if the proposed action were implemented.

A specific ground safety risk associated with use of flares is the potential for a flare falling to the ground without burning (a dud flare). Historic data on range clean-ups at the UTTR, where flare use is intensive in a relatively constrained geographic area, indicate that of all flares expended, an estimated 0.01 percent were actually found on the ground as duds. Instructions are provided by Hill AFB to fire departments and other organizations on the identification of a dud flare and to contact at Hill AFB if a suspected dud flare is found. The risk from dud flares is minimal. It is extremely unlikely that a dud flare could fall from an aircraft and strike an individual on the ground. Should such an extremely remote accident occur, it could result in injury or death. With a dud rate on the ground of approximately 0.01 percent, and a population of less than one person per square mile, the possibility of such an accident is so remote that it is very near zero.

Flight Safety

Aircraft Mishaps

For the proposed White Elk MOA, the estimated average sortie duration may be used to estimate annual flight hours in the airspace. Then, the Class A mishap rate per 100,000 flying hours can be used to compute a statistical projection of anticipated time between Class A mishaps in each applicable element of airspace. In evaluating this information, it should be emphasized that those data considered are only statistically predictive. The actual causes of mishaps are due to many factors, not simply the amount of flying time of the aircraft.

However, several factors can influence the calculation of this projected time interval. Since the calculation is based on hours of flight time per year, an indication of increased risk can result from a large number of aircraft flying in the airspace, or a smaller number flying for extended periods. To place these values into context, it is also appropriate to consider the probability of a mishap, which accounts for each aircraft's exposure. As illustrated in Table 4.5-1, although the greatest indicated risk is associated with combat training in the MOA/ATCAA airspace under the maximum-use scenario, the probability of an F-16 mishap remains very low.

Table 4.4-1 summarizes the statistically predicted minimum time between Class A mishaps for each of the airspace units identified above. While the mishap rate per 100,000 flying hours for the F-16 is 3.8, this rate includes data from the F-16's debut as a new supersonic platform when many accidents occurred.

Over time, all aircraft experience fewer mishaps than the initial introductory phase; thus, accident rates for F-16 aircraft within the White Elk MOA and ATCAAs would probably be less than that projected below. Statistical projections indicate the probability of a Class A mishap occurring within the proposed White Elk MOA and Currie/Tippet ATCAA every 6.4 years, based on the annual sortie operations proposed within the airspace. These are statistical estimates, not predictions. The years between Class A mishaps for F-16s would decrease from 139 to 6.4, but the latter still poses minimal risk. All other aircraft using the airspace would fly about 340 hours annually equating to about one mishap every 70 years; therefore, only the F-16 is presented. Supersonic flight, in and of itself, creates no specific flight safety concerns.

Table 4.4-1. Projected Class A Mishaps – Proposed Action

<i>Airspace</i>	<i>Aircraft</i>	<i>Mishap Rate per 100,000 flying hours</i>	<i>Annual Operations</i>	<i>Annual Hours</i>	<i>Years Between Projected Mishaps</i>
White Elk MOA and Currie/Tippet ATCAA	F-16	3.82	9,200	4,086	6.4

Source: AFSC 2008a.

A Class A mishap can also result in metal debris on the ground. The extent of the debris field depends upon the aircraft accident. Both for reconstructing the cause of the accident and for restoring the accident site as much as possible, the Air Force would make every effort to locate, document, and then clean up debris resulting from any accident.

Concerns over the safety of civilian aircraft, life-flights, and gliders were expressed during the scoping period. Air traffic in the region would not need to be rerouted as operations are not expected to impede or conflict with existing traffic. General aviation pilots would use “see and avoid” rules. As presented in section 4.4.1, life-flights transporting time-critical patients or donated organs receive priority status through any airspace unit when the pilot provides a call sign to the air traffic controller. During peak glider events (i.e., July and August glider meets), Hill AFB would not operate in the MOA/ATCAA airspace. The proposal to expend chaff in the new airspace would not create any flight safety issues. Training chaff is specifically designed to not interfere with FAA ATC radars. Should any issues arise, Salt Lake City ARTCC would coordinate with controllers at Hill AFB, and aircraft dispensing chaff would cease.

As aircraft move through the air, they create vortices from their wing tips. These vortices, collectively called wake turbulence form as the air passes both over and under the wing tips. The pressure differential caused by the passing of air over and under the wings generates lift with the lowest pressure above the wing and the highest pressure under it. Due to this differential, a “rollup” of the airflow occurs behind the wing causing swirling air to trail from the wing tips. The rollup process produces a wake consisting of a counter-rotating vortex extending from each wing tip (FAA 1991). Aircraft begin to generate vortices as

soon as the nose wheel lifts off the surface of the runway; vortex generation ends as soon as the nose wheel touches down during landing.

A complex set of variables and conditions influence the behavior and persistence of vortices. These variables include aircraft weight and size, wing span, wind and weather conditions, atmospheric turbulence, flight mode, altitude, G-forces, and airspeed. The vortex characteristics of any given aircraft can also be changed by extension of flaps or other wing-configuring devices. Aircraft weight and airspeed tend to form the most influential factors, with slow and heavy aircraft generating stronger vortices. Smaller fighter aircraft, like the 388 FW's F-16s, tend to produce minimal vortices that dissipate rapidly (personal communication, Skujins 2005).

Vortices commonly descend behind an aircraft to an altitude of about twice the aircraft's wingspan. For an F-16, that distance would measure about 85 feet. Studies by the Air Force (Air Force 2006c) demonstrate that vortices generated by large aircraft such as B-1Bs and B-52s flying at 500 feet AGL descend and dissipate rapidly and pose no threats to persons, objects, or structures on the ground. Given these results for the large bombers, the F-16s using the White Elk MOA would not generate vortices of sufficient strength or duration to reach the ground since they would fly no lower than 3,100 feet AGL.

Bird/Wildlife-Aircraft Strikes

The floor of the proposed White Elk MOA would be 14,000 MSL, which is approximately 3,100 to 8,500 feet AGL. Studies have shown that 95 percent of bird/wildlife-aircraft strikes at altitudes at or below 3,000 feet AGL (Worldwide Bird-Aircraft Strike Hazard Conference 1990). Additionally, there are no major water-bodies underlying the proposed White Elk MOA and Currie/Tippet ATCAA, lowering the potential for the area to attract birds.

The BASH Team at the Air Force Safety Center has developed a Bird Avoidance Model. This model predicts relative risk of wildlife strikes during selected time-frames in specific geographic areas.

The airspace under this proposal would be located adjacent to the western border of the Gandy MOA. In the Gandy MOA, the Bird Avoidance Model indicates overall moderate risk from October through April (USBAM 2007). The Gandy MOA floor is 100 feet AGL, however, and as mentioned above, the proposed White Elk MOA is not a low altitude airspace unit with operations not to occur below 14,000 feet MSL. Flight activities would all occur above 3,000 feet AGL; less than 5 percent of bird-strikes occur above this altitude. The probability of a bird -aircraft strike in the proposed airspace would be far lower than the moderate risk attributed to the Gandy MOA, based on altitude of strikes. While there could be a risk of a bird strike, the likelihood of a strike occurring in the White Elk MOA would be extremely low; the probability of a strike to a migratory bird would be even lower.

4.4.2 No-Action Alternative

Under the no-action alternative, operations in the Currie/Tippet ATCAA would be unchanged from current conditions. Safety considerations associated with current training operations in the ATCAA airspace as discussed in Section 3.4, would remain unchanged.

Current operations and training activities in the Currie/Tippet ATCAA do not pose a significant safety risk to the public, military personnel, or property. Since these conditions would not change under the no-action alternative, current operations and training activities would not result in significant impacts.

4.5 LAND USE, RECREATION, AND VISUAL RESOURCES

Impact analysis for land use requires identification of management plans and use areas, followed by determination of potential effects due to aircraft operations. According to the Federal Interagency Committee on Urban Noise, noise exposure greater than 65 DNL is considered generally incompatible over residential, public use (i.e., schools), or recreational and entertainment areas. This section focuses on the impacts due to noise from the proposed action on land ownership or land status, general land use patterns, sensitive receptors, land management plans, and special use land management areas.

Potential issues and concerns regarding recreation and visual resources arise from the proposed action. These include an increase in noise and sonic booms in areas under the airspace. The methodology for determining impacts on recreation resources focuses on: 1) determining existing users, and 2) determining the noise and visual impacts on recreational use due to a change in sortie-operations in the proposed MOA/ATCAA.

4.5.1 Proposed Action

Land Use

The additional aircraft operations and activities in the proposed MOA and overlying Currie/Tippet ATCAA represent the element of the proposed action with a potential to affect land use. Such impacts would be indirect, stemming from aircraft overflights and aircraft noise and should represent only negligible impacts to land use.

Under the proposed action, land status and land use patterns in the area would not be altered. First, subsonic noise levels would not perceptibly change and would remain below DNL 45 dB. However, supersonic flight activity in the ATCAA would result in 296 sonic booms throughout the entire airspace each month (an average of 10 per day). As presented in Section 4.3, *Noise*, on average, one sonic boom would be heard about once every two flying days in the center of the airspace. There would be

correspondingly fewer booms at the boundary than toward the center of the airspace under the proposed action. The sonic boom exposure would be a considerable change but it would not alter existing land uses and management.

Noise from sonic booms at the center of the airspace would extend out to the town of McGill. Sensitive receptors include schools and churches and there are several churches and one school in McGill. Since this town lies at the southernmost tip of the ATCAA airspace, it is likely that the noise and sonic booms audible in McGill would be less than that heard in the center of the proposed airspace. Generally speaking, residents living under the proposed White Elk MOA and Currie/Tippet ATCAA would hear more aircraft noise and sonic booms; however, the intensity of the noise would not be sufficient to alter the usage of the land for residential purposes.

The entire area under the MOA/ATCAA, including wilderness and wilderness study areas (WSA), would experience noise associated with sonic booms. Visitors to wilderness areas would be exposed to noise from sonic booms but the short duration of the boom and relative infrequency would still allow the visitors to experience the wilderness characteristics of the areas. The Wilderness Act and enabling legislation allows for military overflights and was not intended to keep sound originating from outside the area emanating into wilderness.

WSAs are defined by agencies based on their outstanding qualities, including naturalness, size, solitude, and other special features, and are managed under the BLM's Interim Management Policy for Lands under Wilderness Review (BLM 1995b). Portions of Becky Peak Wilderness, Goshute Canyon Wilderness, High Schells Wilderness, and the South Pequop WSA, located under the proposed airspace (refer to Figure 3.5-1), would experience a slight increase in subsonic noise levels under the proposed action. However, the noise levels would remain below DNL 45 dB. These areas already experience overflights and low noise levels of DNL 45 dB or less. Under the guidelines presented in the above referenced BLM's management policy, it is not anticipated that implementing the proposed action would reduce the quality of the South Pequop WSA's characteristics or values in a manner that would impair its suitability for designation as wilderness. Similarly, the lack of perceptible change in noise levels and continuation of conditions consistent with baseline demonstrate that none of the wilderness areas would be adversely affected.

Recreation

Recreational opportunities under the proposed airspace are numerous. Hunting, fishing, hiking, camping are prevalent throughout the area. Recreation enthusiasts would occasionally hear sonic booms; it is not expected that there would be a change in recreational activity. Large mammal hunters would generally not perceive a change in hunting patterns due to the sonic booms. Studies indicate that initially there is a startle affect on elk and other mammals; they seem to acclimate rather quickly and after a short while

their heart rate does not elevate when they hear sonic booms (Westman and Walters 1981, Harrington and Veitch 1991, Workman *et al.* 1992). Therefore, elk and deer hunting would not be affected due to the proposed action.

Campers, hikers and other recreational users of the lands under the proposed airspace would experience slight noise increases and sonic booms, but these experiences should be relatively short in duration. Very little flying activity would occur after 10 p.m. and would cease before midnight on any night when night-time operations occur. Campers would likely hear the aircraft during these hours but the overall impacts would be occasional and not significant.

Subsonic noise levels vary under the existing ATCAA and these levels would not exhibit a noticeable change with DNL values of approximately 45 dB resulting in no adverse impact. Supersonic activity would result in up to approximately 10 sonic booms a day within the whole airspace. The introduction of sonic booms in a relatively quiet environment would be noticeable and could be intrusive; although, the noise would be distributed throughout the area of concern and would not be expected to be heard in the same location, it could adversely impact the recreational experiences of visitors. It is expected that one boom about every two flying days would be heard in the center of the airspace.

Visual Resources

Visual intrusions under the proposed action would be minimal and would not represent an increase over baseline conditions sufficient to cause adverse impacts. On rare occasions, contrails may be formed behind operating aircraft at high altitudes. These contrails could be visible but would not alter BLM visual classifications (see Section 3.5) because they would not be permanent alterations to landscape and the degree of contrast would be considered “none” as not attracting attention to itself.

4.5.2 No-Action Alternative

Under the no-action alternative, there would be no establishment of the White Elk MOA and current operations in the ATCAA would remain the same. Additionally, under the no-action alternative, chaff and flares would not be used and supersonic flight would not occur. Implementation of this alternative would not affect land management or use. Access to and availability of recreational resources would remain unchanged. Also, noise would not increase and visual resources would remain unchanged. Therefore, under this alternative, no impacts to land use or recreation and visual resources would be expected.

4.6 BIOLOGICAL RESOURCES

Determination of the significance of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, 2) the proportion of the resource that would be affected relative to its occurrence in the region, 3) the sensitivity of the resource to proposed activities, and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of special concern are adversely affected over relatively large areas or disturbances cause reductions in population size or distribution of a species of special concern. Those biological resources that may potentially be impacted by proposed activities in the MOA/ATCAA airspace are discussed below.

4.6.1 Proposed Action

Vegetation

Potential impacts to vegetation resources under this proposal were evaluated for both direct and indirect effects as a result of chaff fibers and flare ash or fires. Chaff fibers and flare ash are considered non-toxic and therefore would not pose a danger to vegetation. Plants would not be expected to uptake any increased concentrations of aluminum from residual chaff material; therefore plant growth would not be affected. Fires could adversely affect vegetation and wildlife habitat by removal of plant cover (short-term effect) or altering the plant community (long-term effect). Removal of vegetation can also lead to increased erosion and sedimentation that can cause long-term environmental change. Any fire could result in direct losses and indirect negative effects to vegetation resources which could affect the availability of forage material for wildlife. Flares are not authorized for release below 2,000 feet AGL which is well below the 14,000 feet MSL (i.e., 3,100 to 8,500 feet AGL) altitude of release under this proposal. Therefore, impacts to vegetation from fire ignited by flares would not be expected.

Wildlife

Wildlife would be exposed to subsonic noise from aircraft overflights and sonic booms from supersonic training. Supersonic training would occur at altitudes above 18,000 feet MSL. Sonic booms, which do not currently occur in the area, would occur at an average of 10 per day over the whole area. In all areas, animals may initially react negatively to the loud noise created by sonic booms but habituation is expected for most species as discussed below.

Noise

Studies of subsonic aircraft disturbances on ungulates (e.g., pronghorn, bighorn sheep, elk, and mule deer), in both laboratory and field conditions, have shown that effects are transient and of short duration, and

suggest that the animals habituate to the sounds (Workman *et al.* 1992, Krausman *et al.* 1993, 1998; Weisenberger *et al.* 1996). Similarly, the impacts to raptors and other birds from aircraft low-level flights were found to be brief, insignificant, and not detrimental to reproductive success (Smith *et al.* 1988, Lamp 1989, Ellis *et al.* 1991, Grubb and Bowerman 1997).

Studies of the effects of supersonic noise on birds and mammals have suggested that animals tend to habituate to sonic booms and that long-term effects are not adverse. Animals newly or infrequently exposed to aircraft noise exhibit the “startle effect.” Although an observer’s interpretation of the startle effect is behavioral (e.g., the animal runs in response to the sound or flinches and remains in place), it does have a physiological basis. The startle effect is a reflex; it is an autonomic reaction to loud, sudden noise (Westman and Walters 1981, Harrington and Veitch 1991). Literature indicate that captive elk and pronghorn antelope exhibited a startle response and increased heart rates upon initial exposure to a sonic boom and decreased response with succeeding exposures suggesting habituation (Workman *et al.* 1992). As with wildlife, the startle reflex is the most commonly documented effect on domesticated animals. Results of the startle reflex are typically minor (e.g., increase in heart rate and nervousness) and do not result in injury. Exceptions may occur when animals are crowded in small enclosures such as corrals or feedlots, where loud, sudden noise may cause a widespread panic reaction. However, such negative impacts were only observed from aircraft at less than 330 feet AGL (USFS 1992).

In raptors, Ellis *et al.* (1991) found that peregrine and prairie falcons’ responses to simulated sonic booms were often minimal and never associated with reproductive failure. Typically, birds quickly resumed normal activities within a few seconds following a sonic boom. While the falcons were noticeably alarmed by the sonic booms, the negative responses were brief and not detrimental to reproductive success during the course of the study. Limited research has been done with reptiles in response to aircraft noise and sonic booms. A study of the desert tortoise (*Gopherus agassizii*) newly exposed to simulated subsonic aircraft noise, reported that the tortoise initially adopted a defensive response by “freezing” their activity for up to 113 minutes (Bowles *et al.* 1999). During subsequent exposure, the response was a milder defensive state for less than five minutes. Response to sonic booms was limited to brief periods of adopting an alert or watchful behavior.

In summary, subsonic noise, supersonic noise, and frequency of sonic boom occurrence would not be expected to have a significant adverse impact to wildlife.

Chaff and Flares

Wildlife do not use chaff fibers for food or nesting material and chaff has not been proven to be toxic to animals if ingested. Because of the nature of disposition and the low rate of application and dispersal of chaff filaments during defensive training, wildlife and livestock would have little opportunity to ingest chaff filaments or end caps. Although some chemical components of chaff are toxic at high levels, such

levels could only be reached through the ingestion of many chaff bundles or billions of chaff filaments. Air Force chaff filament size is approximately 0.04 inches in diameter and 0.3 to 1 inch in length, which is too large for inhalation. On the ground, chaff degrades over time to aluminum or silica particles that are indistinguishable from ambient soil materials. Chaff fragments do not display asbestos-like characteristics and do not pose asbestos-like health risks. The number of degraded or fragmented particles is insufficient to result in disease (Spargo 1999). Inhalation or ingestion of chaff filaments or fragments with adverse effects to wildlife, livestock, or humans is unlikely.

The possibility of a fire being ignited by a released flare would be remote considering the release altitude under this proposal. If a fire were to occur, impacts to habitat disturbance would be similar to those described for vegetation; the impact to wildlife would be short term and would not be significant. The probability of an intact flare falling into an aquatic system would also be extremely remote. Flare ash would be widely dispersed and would not be expected to accumulate on foliage consumed by wildlife.

The potential for wildlife to be impacted by chaff residual material or fragments or fire from flares released during defensive training would be extremely small resulting in negligible potential for impacting this resource.

Special-Status Species

No federally-listed plant or animal species are known to occur in the area of concern. Although the USFWS has petitioned to list the pygmy rabbit, the species is not currently protected under the ESA. Under the proposed action, no adverse impacts to this resource would be expected.

Wetlands and Jurisdictional Waters of the United States

No known wetlands or jurisdictional waters of the United States occur within the affected environment. A search for wetlands or jurisdictional waters of the United States indicate the lack of these resources; therefore, no direct or indirect impacts would be expected from implementation of the proposed action.

4.6.2 No-Action Alternative

Under the no-action alternative, conditions in the environment would remain the same as baseline or existing conditions. Aircraft in the Currie/Tippet ATCAA would not be authorized for supersonic flight, chaff and flares would not be dispensed in the airspace, and aircraft would not operate below 18,000 feet MSL. Noise levels would remain unchanged. In summary, no adverse impacts to biological resources would be anticipated under the no-action alternative.

4.7 CULTURAL RESOURCES

Procedures for assessing adverse effects to cultural resources are discussed in regulations for 36 CFR 800, NHPA. An action results in adverse effects to cultural resources eligible to the National Register when it alters the characteristics that qualify the resource for inclusion in the register (its integrity). Adverse effects are most often a result of physical destruction, damage, or alteration of a resource; alteration of the character of the surrounding environment that contributes to the resource's integrity; introduction of visual, audible, or atmospheric intrusions out of character with the resource or its setting; and neglect or the resource resulting in its deterioration or destruction; or transfer, lease, or sale of the property.

Possible sources of adverse effects can include ground disturbance, vandalism, noise vibrations, visual intrusions, and change in land status that reduces legal protection of the resource. For the proposed action, the potential impacts would be visual and noise related only. Impacts due to visual intrusion or noise may occur when the setting is altered, either through overflights (including the release of self-protection chaff and flares) in an area not primarily exposed to these elements. The damage potentially caused by noise vibrations and visual intrusion is often difficult to evaluate.

For the proposed action, impacts to cultural resources beneath the affected airspace were assessed by using noise analysis data, sortie-operations numbers, and documented information on chaff and flares to determine whether there would be an increase in noise or visual intrusion for overflights sufficient to affect cultural resources known to exist underneath the airspace.

The proposed action does not include on-the-ground activities that typically can cause direct or indirect adverse effects to cultural resources eligible for listing on the National Register. There would be no direct ground disturbing activities such as construction or demolition, clearing, grading, paving, utility installation, or earth moving. The creation of the proposed White Elk MOA does not include direct on-the-ground effects, such as those that could occur from increased use of areas near or adjacent to archaeological sites, possibly resulting in vandalism, accelerated erosion, or other adverse effects. Similarly, the type of actions that could result in direct effects to historic buildings and structures eligible to the National Register that might typically occur as a result of demolition or renovation are not part of the proposed action. Indirect effects to cultural resources as a result of the proposed White Elk MOA could stem from changes in the visual or noise environment. The introduction of material to archaeological sites or standing structures from the use of chaff and flares could also be considered an indirect effect, primarily a visual or aesthetic one. Traditional cultural resources have the potential to be affected by any of these actions, as well (see Section 4.10).

The greatest potential impact to cultural resources would be from supersonic flight, which can create noise vibrations in the form of sonic booms. These vibrations can have adverse impacts on deteriorated

historic structures, which are plentiful in the many ghost towns found throughout the affected environment.

In response to submittal of the *NHPA Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada*, the Ely District BLM requested that the Air Force implement a five-year monitoring plan of historic structures within the Cherry Creek Mining District. In August 2009, the Air Force agreed to coordinate and finalize a monitoring plan with both the Ely District BLM and Nevada SHPO (Appendix C).

In October 2009, the Air Force contacted via letter and phone the chairperson of the Te-Moak Tribe of Western Shoshone Indians of Nevada requesting their assistance in identifying any potential impact to areas of traditional importance to the tribe; no written or verbal comments or responses were received. In October 2010, the Nevada SHPO documented that the Air Force had made a reasonable and good faith effort to identify historic properties that could be affected by this undertaking and issued concurrence with the Air Force's determination that the proposed action would not pose an adverse effect to historic properties (Appendix C).

4.7.1 Proposed Action

Under the proposed action supersonic flight would be permitted within the existing Currie/Tippet ATCAA and the release of flares and chaff would be permitted within both the ATCAA and the proposed White Elk MOA airspace. Though the MOA covers portions of the existing Currie/Tippet ATCAA, the current operations do not permit supersonic flight or the release of chaff and flares.

Visual Intrusions

Visual intrusions under the proposed action would be minimal and would not represent an increase over baseline conditions sufficient to cause adverse impacts to cultural resources. Though establishment of the proposed White Elk MOA would result in sortie-operations at a lower altitude than currently allowed within the existing Currie/Tippet ATCAA, the aircraft would still be flying no lower than 14,000 feet MSL (between 3,320 and 9,745 feet AGL). Sightings of aircraft would be rare due to these high overflight altitudes. Even accounting for the relatively high elevations in some mountainous portions of the lands beneath the affected airspace, aircraft would be at least 1/2-mile overhead. Flares burn hottest and are thus brightest when they reach the tail of the aircraft and therefore, due to the high altitude of the aircraft, they would not be a significant visual intrusion.

Studies have shown that chaff and its residual material do not pose a significant threat to the visual integrity of archaeological and architectural resources (GAO 1998). Chaff does not accumulate to any great degree. Additionally, the same study showed that the fibers generally dissipate within a few days

presumably due to the effects of wind, sediment erosion, and rain or snow. The chaff end cap is usually clear plastic and these were noticeable from a few feet away during the pedestrian survey. They were not visible during the “windshield” survey conducted from vehicles. These end caps would become less visible after sun and weather exposure from the arid environment fades them. No studies are available on the visual effects of flare residual material, but the residual material from flares is compatible in size to that from chaff minus the chaff fibers. Overall, chaff and flares are unlikely to adversely affect cultural resources. The residual material from both falls to the ground in a dispersed fashion and does not collect in quantities great enough to adversely affect the National Register status of archaeological or architectural resources; or the appreciation or use of traditional cultural resources. However, such impacts to traditional cultural resources are more difficult to assess and no studies similar to those mentioned above have been conducted on traditional cultural resources. However, no concerns regarding visual intrusions have been expressed to-date by American Indian groups in the area (see Section 4.10).

Noise Intrusions

The greatest impacts to cultural resources would be expected from an increase in noise, specifically noise vibrations (sonic booms) caused by supersonic flight. There would be an increase in flights over the area by about 9,042 sorties if the proposed White Elk MOA were created. However, this increase would not have an effect on the level of noise, which would remain around DNL 45 dB. For the proposed action, an average of 10 sonic booms would occur per day throughout the entire affected airspace resulting in an average of about one sonic boom every two flying days at the center of the airspace. The effect of this level of noise vibration is negligible on historic structures and would be no more of an effect than strong winds, which occur regularly throughout the area.

Noise modeling indicates that the noise levels would be greatest (approximately CDNL 49 dB) in the Cherry Creek area of Elko County. The Cherry Creek area is a historic mining settlement that dates back to the early 1870s. It is located near Fort Schellbourne, a National Register-listed historic settlement also dating to the early 1870s. Both of these areas contain standing historic structures. Sonic booms would be more likely to occur in this core area. According to generally accepted noise studies, structural damage would be expected at 4 to 10 psf to structures of glass and adobe or similar plaster-type materials. Under the proposed action, sonic booms would have average peak overpressures of less than 1 psf with only a small probability of booms exceeding 6 or 7 psf. Historic standing structures within the land beneath the affected airspace consist primarily of wood or log buildings with no window glass. The nearest adobe-like structures are historic waddle and daub dwellings at Goshute east of the Goshute Indian Reservation (Maggie Brown, personal communication 2008).

Three National Register properties are located beneath the affected airspace - Fort Schellbourne, the McGill Drug Store, and the American Legion Hall in McGill. Current conditions for all resources include overflights by military and civilian aircraft. Neither the noise nor the visual presence of these overflights

have affected the National Register-eligibility status of the resources. Though the proposed action would allow for supersonic flight, both the altitude of the aircraft and the frequency of sonic booms would ensure that there would be no adverse affects to cultural resources. Overall, there would be no adverse affects on cultural resources as a result of the proposed action.

Because no traditional cultural resources have been identified, impacts to this category of cultural resources are considered unlikely (see Section 4.10).

4.7.2 No-Action Alternative

Under the no-action alternative, there would be no changes in airspace activities within the Currie/Tippett ATCAA and the White Elk MOA would not be created. There would be no change in visual or noise intrusions. Therefore, the no-action alternative would result in no impacts to cultural resources.

4.8 SOCIOECONOMICS

Analyses of potential impacts to socioeconomic resources performed for this EIS considered both economic and social characteristics of the affected environment. These characteristics include the size and demographic composition of the population; employment, income, and other general economic indicators. Assessment began with an understanding of the current socioeconomic conditions of the affected environment presented in Section 3.8. As noted there, a few hundred people live under the proposed airspace, so the potential for impacts would remain minimal.

The Elko County Board of Commissioners provided comments during scoping (Appendix B). The Commissioners expressed concerns that the Air Force proposal would have a negative impact on their economy through, 1) restricted land development under the airspace, 2) lost revenue and impacts to tourism due to commercial and private aircraft flight restrictions in/out of Ely and Wendover airports, 3) impact future projects (i.e., wind energy, power plants), and 4) provide no direct economic benefit. Consideration of these concerns is discussed in the following section.

4.8.1 Proposed Action

Employment and employment opportunities in Elko County and White Pine County would not be affected through implementation of the proposed action. No aspect of the proposal would impact local county populations as Air Force personnel conducting flight operations in the White Elk MOA or overlying Currie/Tippett ATCAA would either live in the vicinity of Hill AFB or transit to remote locations. Land development would not be restricted by implementation of the airspace proposal; no permanent structures or equipment would be placed on the ground. Concerns over the safety of civilian aircraft, life-flights, and gliders were expressed during the public comment period. Air traffic in the

region would not need to be rerouted as operations are not expected to impede or conflict with existing traffic. General aviation pilots would use “see and avoid” rules. As presented in section 4.4.1, life-flights transporting time-critical patients or donated organs receive priority status through any airspace unit when the pilot provides a call sign to the air traffic controller. Life-flights to Salt Lake City under these conditions would receive authorization to transit the proposed MOA without delay; therefore, no additional costs for transport would be anticipated. However, non-critical life-flight services could be rerouted around an active MOA which could result in additional transport costs to the patient. Both Life-Flight and Air Med have stated that they have experienced no delays into and out of Ely with transport patients (personal communication, Angus 2008).

At the Ely Airport, current commercial flights to and from Moab, Utah and Denver, Colorado would not be affected by the proposed White Elk MOA. Commercial carriers do not fly in MOAs; therefore, the potential for existing or new carrier service to northern destinations out of Ely Airport would not be restricted by the proposed airspace. White Pine County and Ely Airport representatives have raised concerns that glider pilots, who operate at 14,000 to 16,000 feet MSL within the elevation range of the proposed MOA, would perceive conflicts within the MOA and stop using the airspace. As discussed in section 3.2.2, aircraft operating under VFR between any of the airports in the Ely and Elko areas adjacent to the proposed White Elk MOA airspace may fly through the MOA, using see-and-avoid navigation. The procedures for VFR general aviation air traffic that transit through MOAs would apply to the proposed White Elk MOA; therefore, no direct impacts to general aviation would be expected.

The Air Force would minimize flight activity in the MOA and overlying ATCAA during extensive glider activities (i.e., July and August glider meets). The proposed action, however, could affect incidental glider use of Yelland Field indirectly if pilots perceive the MOA as an impediment to their activity resulting in a decrease in extended visits to the area from glider pilots. Perceived issues with access and safety could be alleviated through the use of transponders onboard gliders and pilot education about MOA rules and regulations, and pilot communication with appropriate FAA flight service centers regarding MOA activities. Hill AFB airspace managers commonly provide briefings to the glider community on procedures in order to enhance safety (personal communication, Angus 2008).

The floor of the MOA would be well above any future power plants or wind-energy projects. The Air Force currently provides a small economic benefit to Elko County through the purchase of goods and services when JTACs missions are being conducted (see Section 3.2). Personnel (from 6 to 12) stay in hotels, purchase meals, and refuel vehicles in West Wendover during JTACs missions that occur up to 20 weeks per year. This trend would likely continue into the future, providing a small economic benefit to the county.

In summary, this airspace proposal would not result in significant adverse socioeconomic impacts to Elko and White Pine Counties. There is the possibility of a reduction in revenues in White Pine County

generated by recreational glider activity if conflicts are perceived in the proposed MOA; however, as discussed above, implementing deconfliction measures could minimize actual and perceived MOA conflicts. General aviation should not be affected in the counties as aviation rules for aircraft transiting the airspace under VFR conditions would not change. JTACs missions that currently provide some economic benefit to Elko County could extend to the town of Ely in White Pine County under this proposal.

4.8.2 No-Action Alternative

Under the no-action alternative, the Air Force would not create the White Elk MOA, supersonic flight would not be authorized in the overlying Currie/Tippet ATCAA, and chaff and flares usage would not be permitted in the existing airspace. Implementation of this alternative would not adversely affect existing socioeconomic resources associated with Elko or White Pine Counties. Hill AFB personnel involved in JTACs missions would continue to purchase supplies and services from West Wendover in Elko County; however, the missions would not be considered for extension into the town of Ely.

4.9 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

The low-income communities and the minority population under the current airspace and proposed action were quantified based on census data (see Table 3.9-1). These numbers were compared with state population data to determine whether low-income or minority populations located under the proposed airspace would experience disproportionately high and adverse impacts. Federal agencies are required by law to address potential impacts of their actions on environmental and human health conditions in minority and low-income communities. Furthermore, they must identify and assess environmental health and safety risks that may disproportionately affect children.

The environmental justice analysis examines the potential for disproportionate effects from implementation of the proposed action on minority or low-income communities under the airspace units.

4.9.1 Proposed Action

Subsonic noise levels for the area under and near the proposed White Elk MOA and overlying ATCAA would remain below DNL 45 dB (refer to Table 4.3-2 for baseline and proposed subsonic noise levels); however, noise from supersonic operations would increase noise levels in the area of concern. Noise from supersonic operations is presented in CDNL; levels of 49 CDNL or less were identified (Figure 4.3-1). An average of 10 sonic booms per day would occur over the whole area with one sonic boom heard at the center of the airspace approximately every two flying days.

No health or safety risks associated with use of chaff and flares in the airspace would be anticipated. Refer to Section 4.4 and Appendices E and F for information regarding chaff and flares.

The affected population under the area of concern was determined using U.S. Census Bureau 2000 census block group data to calculate the number of persons under various CDNL noise contours. The original population for each block group was then proportionalized based on the area underneath each noise zone and its coincident land use. In this way, unpopulated government lands were not factored into the estimates.

Minority and Low-Income Populations

Under the proposed action, subsonic noise levels (DNL) would remain below DNL of 45 dB. Noise due to sonic booms in the overlying Currie/Tippet ATCAA would generate noise of CDNL 49 dB; this level does not exceed the level identified by the USEPA as protective of public health. Supersonic noise would affect the area population as a whole; however, the noise would be short-term in duration and would not be expected to have an adverse affect on human health and the environment. The percentage of minority populations affected in both counties is considerably less than the minority population of the state while the percentage of low-income populations affected compare similarly to the state's percentage of low-income persons (Table 4-9.1).

Table 4.9-1 Minority and Low-Income Populations Under the Currie/Tippet ATCAA and White Elk MOA with Noise Greater than 46 CDNL					
	<i>Total Population</i>	<i>Minority Population</i>	<i>Percent Minority</i>	<i>Low-Income Population</i>	<i>Percent Low-Income</i>
Elko County	53	9	17%	5	10%
White Pine County	115	9	8%	16	14%
<i>State of Nevada</i>	2,495,529	1,026,812	41%	263,522	11%

Source: USCB 2008b, Based on 2000 Census Data.

Protection of Children

McGill Elementary, located within the southernmost tip of the MOA/ATCAA airspace, would be the only school located under this airspace proposal. Noise at McGill Elementary would be less than that heard in the center of the proposed airspace and increased noise levels would be nearly imperceptible at this location. Potential impact to children from aircraft operating in the MOA/ATCAA would not be expected to pose safety risks to children as operations in the MOA/ATCAA would represent similar operations to those conducted in the UTTR airspace. As presented in 4.2-2, the probability of an F-16 mishap remains very low.

In summary, there would be no anticipated disproportionate impact to the human health or environmental conditions in minority or low-income communities or result in an adverse impact to the health and safety of children.

4.9.2 No-Action Alternative

Under the no-action alternative, the White Elk MOA would not be created and supersonic flight in the Currie/Tippet ATCAA and chaff and flare use throughout the airspace would not be authorized. Therefore, impacts to human health and environmental conditions in minority and low-income communities would remain unchanged compared to the existing conditions. Potential risks to the safety of children would remain at *status quo* under the no-action alternative.

4.10 AMERICAN INDIAN CONCERNS

American Indians' traditional values regarding land and the natural world encompass both tangible physical aspects and less apparent values, such as relationships and spirituality. They also look at whole landscapes and systems. Consultation with American Indian tribes on this proposal identified areas of concern that have been divided into the following standard NEPA categories: noise, safety, cultural resources, natural resources, and socioeconomics. The potential impacts to these resources from implementation of this airspace proposal are summarized below and discussed in detail in the respective sections.

4.10.1 Proposed Action

Noise

The proposed action would involve an increase in the number of sorties flown within the Currie/Tippet ATCAA. However, this would not cause a net increase in current noise levels, which would remain around a DNL 45 dB, well below DNL 55 dB, which the USEPA (1974) identified as “. . . requisite to protect public health and welfare with an adequate margin of safety” (see Appendix F). This noise level would have no adverse effect on people or animals residing beneath the affected airspace. Additionally, one sonic boom is likely to be heard only once every two flying days at the center of the airspace. As such they are not likely to disrupt traditional cultural ceremonies or harm traditional plants, animals, or other resources.

Safety

Day-to-day flare operations and maintenance activities within the proposed White Elk MOA would be performed in accordance with applicable Air Force safety regulations, published Air Force Technical

Orders, and standards prescribed by AFOSH requirements. The handling, processing, and storage of products of these activities are accomplished in accordance with all federal and state requirements applicable to the substance generated. Flare deployment in the proposed MOA airspace is governed by a series of regulations that are based on safety and environmental considerations and limitations. See Section 3.4 for these regulations. If these regulations are followed, then people living within the reservations that fall under the MOA should not be harmed. The likelihood of an aircraft crash is slight based on the numbers of sorties proposed and the safety records for this type of airspace usage. Section 3.4 has more statistical information on the safety of overflights. The likelihood of a crash impacting people, livestock, or crops located beneath the affected airspace is extremely low.

Cultural Resources

Because the proposed action involves airspace only with no direct ground impacts, prehistoric archaeological sites that are generally located below the ground surface or as artifact scatters on the ground surface would not be affected. There would be no adverse impacts to architectural resources due to the low occurrence of sonic booms and no net increase of noise levels. Low altitude flights would not be conducted as part of this proposed action; therefore, visual impacts would be very minimal as well. The likelihood of flares causing visual impacts or fires is low as is the impact from chaff. No impacts to cultural resources are expected due to the low occurrence of sonic booms.

Natural Resources

Sonic booms and frequency of occurrence would not be expected to have a significant adverse impact to wildlife. The potential for plant and animal wildlife or domestic stock animals to be impacted by chaff residual material or fragments or fire from flares released during defensive training as part of the proposed action would be extremely small resulting in negligible potential for impacting this resource.

Socioeconomics

The proposed action would not result in adverse socioeconomic impacts to Elko and White Pine Counties overall. The economic well-being of the tribes under or in the vicinity of the affected airspace would not be adversely affected and there should be no reduction in revenues generated by tribal groups. JTACs missions that currently provide some economic benefit to Elko County could extend to the town of Ely in White Pine County under this proposal, which could indirectly benefit the Ely Indian Colony because some colony members work in town.

4.10.2 No-Action Alternative

Under the no-action alternative, there would be no changes in airspace activities within the Currie/Tippet ATCAA and the White Elk MOA would not be created. There would be no changes in baseline conditions. Therefore, the no-action alternative would result in no impacts to American Indian traditional cultural resources.

5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE EFFECTS

This section provides 1) a definition of cumulative effects, 2) a description of past, present, and foreseeable actions relevant to cumulative effects, 3) an assessment of the nature of interaction of the proposed action with other actions, and 4) an evaluation of cumulative effects potentially resulting from these interactions.

5.1.1 Definition of Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis within an EIS should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). Recent CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider other projects that coincide with the location and timetable of the proposed action and other actions. Cumulative effects analysis must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur concurrently or in a similar location. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects the analysis needs to address three fundamental questions:

1. Does a relationship exist such that elements of the proposed action might interact with elements of past, present, or reasonably foreseeable actions?
2. If one or more of the elements of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

5.1.2 Scope of Cumulative Effects Analysis

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EIS, the area underlying the existing Currie/Tippet ATCAA defines the primary geographic extent of the cumulative effects analysis. In addition, the potential exists for indirect influence of the proposed action on communities in Elko and White Pine Counties in northeastern Nevada. Past actions within the affected area relate predominantly to Air Force activities within the existing ATCAA. Examination of other actions not occurring within or adjacent to this affected area demonstrates that they lack the necessary interactions to produce cumulative effects.

The time frame for cumulative effects centers on implementation of the proposed action; the effects of implementing the proposed action would continue into the foreseeable future due to aircraft training requirements.

Another factor influencing the scope of cumulative effects analysis involves identification and consideration of other actions. Beyond determining that the geographic scope and time frame for the actions interrelate with the proposed action, the analysis employs the measure of “reasonably foreseeable” to include or exclude other actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Scoping also can provide insight into such actions, and local comments received at scoping for this EIS identified other such actions discussed below. Documents used to define other actions included notices of intent for EISs and EAs, management plans, land use plans, other NEPA studies, and economic and demographic projections.

5.1.3 Cumulative Effects of Past, Present, and Reasonably Foreseeable Actions

Actions potentially relating to the cumulative effects for the proposed White Elk MOA could include those of the DoD, Department of the Interior, and local actions. The following outlines these actions and assesses their relationship to the proposed MOA.

DoD Past, Present, and Future Actions

Mountain Home AFB, Idaho

Mountain Home AFB is an active military installation that undergoes continuous change in mission and in training requirements. This process of change is consistent with the United States defense policy that the Air Force must be ready to respond to threats to American interests throughout the world. Several

recent mission and training requirements have resulted in aircraft changes at the base, and resultant airspace expansion efforts near the proposed White Elk MOA.

Base Realignment and Closure (BRAC) actions at Mountain Home AFB have changed the aircraft type and number assigned to the base. After BRAC actions are complete (2011), the base will fly a complement of 42 F-15E aircraft. Also, the Air Force is working with the State Department and our allies to beddown a training squadron of the Republic of Singapore Air Force F-15 aircraft at Mountain Home AFB. In addition to the 42 U.S. Air Force F-15E aircraft, the Republic of Singapore Air Force beddown would include 10 similar F-15 aircraft arriving at the base from 2009 through 2011. The Air Force prepared an EA for the *Republic of Singapore Air Force F-15SG Beddown, Mountain Home AFB* (Air Force 2007b) in 2007. The Republic of Singapore Air Force beddown would result in a 23 to 30 percent increase in MOA usage.

To facilitate these aircraft changes and MOA training activities, Mountain Home AFB proposes to expand the Paradise MOA laterally and vertically by 16,985 cubic nm. This proposed expansion, currently in the preliminary stages of environmental review, would extend the eastern boundary of the Paradise MOA in Nevada to the east, and would also involve lowering the floor altitude from 14,500 feet MSL to 10,000 feet MSL. This would result in more airspace coverage of Elko County in which the White Elk MOA is proposed.

United States Air Force and Air National Guard

On December 30, 2009, a Notice of Intent was published in the *Federal Register* announcing Air Combat Command's intent to prepare an EIS for basing operational F-35 aircraft within the continental United States. The F-35 will replace legacy aircraft (i.e., F-15, F-16) in the Air Force and Air National Guard inventories. The proposed basing alternatives include Mountain Home AFB; Hill AFB; Shaw AFB, South Carolina; Burlington Air Guard Station, Vermont; Jacksonville Air Guard Station, Florida; and McEntire Joint National Guard Base, South Carolina.

The White Elk MOA EIS does not include analysis of the F-35 basing proposal at Hill AFB. The F-35 Operational Basing EIS analysis for Hill AFB will analyze usage of existing airspace. A separate NEPA document for use of the White Elk MOA would be prepared if the Air Force basing decision included replacing of Hill AFB F-16 aircraft with F-35 aircraft.

Department of Interior Past, Present, and Future Actions

BLM

The BLM manages millions of acres of public lands in eastern Nevada which include portions of land underlying the existing ATCAA and proposed White Elk MOA. Management of the multiple-use public lands requires continued updating and changes to area resource management plans to maintain land use flexibility while protecting sensitive species. The White Elk MOA proposal would be a continuation of the military mission in the airspace and would not affect BLM land management in areas in the vicinity underlying White Elk MOA airspace. Therefore, there are no cumulative impacts anticipated when considered with other past, present, or future actions.

Local Actions

The White Elk MOA overlies Elko and White Pine Counties. Plans are progressing for scheduled air service between the Ely airport in White Pine County and Elko airport in Elko County. Due to local concerns, the initial White Elk MOA proposal was altered to accommodate the approach path to the Ely airport for this proposition. With this alteration, the potential cumulative impact to regional air traffic from the White Elk MOA proposal would be negligible.

5.2 ASSESSMENT OF CUMULATIVE EFFECTS BY RESOURCE

Analysis of the White Elk MOA proposal and associated actions (i.e., chaff and flares, supersonic operations), when considered cumulatively with past, present, and/or future actions, would not result in any adverse and/or significant impacts to airspace and aircraft operations; noise; safety; land use, recreation, and visual; biological resources; cultural resources; socioeconomics; environmental justice and protection of children; and American Indian Concerns.

Airspace and Aircraft Operations

Cumulatively, the proposed White Elk MOA action would have little effect on the lands underneath the MOA as its dimensions are slightly less than that of the existing, overlying Currie and Tippet ATCAAs currently utilized by Hill AFB aircraft. Development at the Ely Airport could expand operations in the Ely terminal airspace, but should not have an adverse effect on White Elk MOA airspace operations (or vice versa) due to both the ongoing consultation process as well as FAA and Air Force regulations. Programs, policies, procedures, and manuals are in place to ensure safe airfield operations and flight safety.

The proposed Mountain Home AFB Paradise MOA expansion would add aircraft operations to the eastern Nevada region. Such operations would be performed at lower altitudes than in the past. While the proposed White Elk MOA and Paradise MOA expansion would cumulatively increase the amount of area in Nevada (especially Elko County) overlain by military airspace and the quantity of Air Force overflights, they would not overlap in any way. Furthermore, neither proposal would independently result in significant impacts to the airspace system. Without any overlap, these proposed actions would not generate a significant cumulative impact.

In summary, impacts of the proposed White Elk MOA to civil aviation operations and airspace management would not result in significant adverse impacts when evaluated and considered cumulatively with the other actions. The Air Force and FAA would insure this outcome by following established operating procedures, conducting all flight operations in compliance with existing regulations and restrictions, and through continued coordination between the FAA and Air Force regarding operations within the airspace.

Noise

Creation of the White Elk MOA would increase sortie-operations in the airspace, and supersonic flight in the Currie/Tippet ATCAA would raise noise levels in the area and affect the noise environment of the underlying lands. As Section 4.3 demonstrates, these increases in noise levels and the addition of sonic booms would not pose a significant adverse impact. Lowering of the floor and changing the shape of the Paradise MOA would likely result in increased noise levels. However, since these two actions would not affect areas within even 50 nm of each other, cumulative impacts are unlikely.

Safety

None of the associated actions under the White Elk MOA proposed would change safety procedures in the airspace or on the lands underneath it. BLM and Air Force safety and fire management procedures are already prescribed through existing operating agreements. Other DoD actions would not physically coincide or overlap with the proposed action. For this reason, their independent effects would not be additive. Conditions of BLM, state, and local lands underlying the White Elk MOA could change, possibly raising the amount of fire risk. However, the proposed altitude for release of flares would not change, and the potential for a flare-caused fire would remain extremely low.

Land Use and Recreation

Land use impacts should not differ from those presented in Section 4.5. Since the increase in noise levels due to supersonic operations in the ATCAA and establishment of the White Elk MOA would not

independently cause significant impacts and no other action would measurably add to the noise levels, no cumulative impacts are anticipated.

Biological Resources

Cumulative Impacts to biological resources underlying the proposed White Elk MOA and overlying ATCAA would not differ from those presented in Section 4.6. As an airspace action only, no land would be disturbed that could adversely impact threatened and/or endangered species or habitat supporting these species. Other actions may affect ground resources but, since the proposed White Elk MOA would not generate any impacts to similar resources, there would be no additive consequences.

Cultural Resources

No adverse impacts to cultural resources would result from increased noise levels and vibrations, visual intrusions from overflights, or effects from chaff and flare use. Overflights would not affect archaeological sites as they do not impact the ground surface. There are 45 NRHP-eligible structures and 3 NRHP-listed architectural sites located under the affected airspace.

In the overlying White Elk MOA and existing ATCAA airspace, impacts from overflights would require high decibel levels, generated at close proximity to the structure, and in a low frequency range to create noise-related vibration damage to structures, even historic buildings (USFS 1992; Battis 1983, 1988). Aircraft must generate at least 120 dB at a distance of no more than 150 feet to potentially result in structural damage (Battis 1988). Even a direct overflight of a fragile structure by a large, high-speed aircraft has less than a 0.3 percent chance of damage (Sutherland 1990). Operations at higher elevations have an even lower probability of being affected by aircraft overflights. Historic structures are unlikely; therefore, to be adversely affected by noise and vibrations by overflights since subsonic noise levels (SEL) from the F-16 would not exceed 110 dB

Sonic booms expected with the F-16 sortie operations would occur within the ATCAA airspace and their impact to cultural resources is presented in Section 4.7. The characterization of these impacts would not change when considered cumulatively with other actions. The effects to cultural resources from the use of flares is usually associated with the secondary effects of fire, and to date, have little, if any impact on cultural resources. Chaff and flare use would have a negligible cumulative effect on cultural resources.

In summary, no adverse impacts to cultural resources are anticipated with proposed action when considered cumulatively with other actions within the same area.

Socioeconomics

When considered cumulatively, socioeconomic impacts associated with this airspace proposal would be negligible relative to impacts associated with the current growth that Elko and White Pine Counties are currently experiencing. Input to the economy from JTACs missions will continue for the foreseeable future; however, the contribution is minimal. Those minimal contributions are overshadowed by the road, public services, and utility upgrades and construction associated with the local urban area population growth. There would be no cumulative impacts.

Environmental Justice and Protection of Children

Impacts would not differ for minority or low-income populations from those presented in Section 4.9 of this EIS. No other projects, when considered cumulatively, would disproportionately impact these populations (as well as the potential risk to children) under the White Elk MOA airspace.

American Indian Concerns

An increase in sonic boom frequency could adversely affect traditional uses or sacred areas by creating an audible intrusion to the setting, as could chaff use impair visual aspects; however, government-to-government consultations have not elicited concerns.

American Indian views on the effects of the proposed action and other actions likely differ from those presented for the individual resources. The concerns would match those presented in Section 3.10. Additionally, consultation with American Indian groups would continue through the Native American Program to identify areas of concern and to determine the extent of effects to traditional cultural resources.

5.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural site).

Most impacts for the proposed action would be long lasting but negligible. Military training, by necessity, involves consumption of nonrenewable resources, such as gasoline for vehicles and jet fuel for aircraft. Under this proposal, Hill AFB F-16 training operations would extend further from the base and existing UTTR airspace, so increased jet fuel consumption would be expected. JTACs operations would also extend further from the base; therefore, fuel consumption for military vehicles involved in JTACs operations would be expected to increase. No irreversible or irretrievable effects are expected for cultural, biological (including water), or land resources.

Secondary impacts to biological resources could occur in the unlikely event of an accidental fire, caused by an aircraft mishap or an improperly deployed flare. However, while any fire can affect biological resources (plants and animals) the risk of fire hazard from aircraft training and operations would remain very low.

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DISTRIBUTION LIST

Distribution List

<i>Prefix</i>	<i>First</i>	<i>MI</i>	<i>Last</i>	<i>Title</i>	<i>Organization Name</i>	<i>Address</i>	<i>City</i>	<i>State</i>	<i>Zip</i>
Congressional/State Elected Officials									
Honorable	John		Ensign	U.S. Senator	Lloyd George Federal Bldg	333 Las Vegas Blvd South, Suite 8203	Las Vegas	NV	89101
Honorable	John		Ensign	U.S. Senator	119 Russell Senate Building		Washington	DC	20510
Honorable	John		Ensign	U.S. Senator		600 East William Street, Suite 304	Carson City	NV	89701
Honorable	Harry		Reid	U.S. Senator	Lloyd George Federal Bldg	333 Las Vegas Blvd South, Suite 8016	Las Vegas	NV	89101
Honorable	Harry		Reid	U.S. Senator	528 Hart Senate Building		Washington	DC	20510
Honorable	Harry		Reid	U.S. Senator	600 East William Street, Suite 302		Carson City	NV	89701
Honorable	Paul		Ray	U.S. Representative		P.O. Box 977	Clearfield	UT	84089
Honorable	John	L	Valentine	State Senator		857 East 970 North	Orem	UT	84097
Honorable	Greg	J.	Curtis	U.S. Representative		P.O. Box 145030	Salt Lake City	UT	84114
Honorable	Jim		Gibbons	Governor		555 East Washington Ave, Suite 5100	Las Vegas	NV	89101
Honorable	Dean	A	Rhodes	State Senator	Rural Nevada Senatorial District	Box 8	Tuscarora	NV	89834
Honorable	Shelley		Berkley	U.S. Congresswoman	District 1	2340 Paseo Del Prado, Suite D 106	Las Vegas	NV	89102
Honorable	Dean		Heller	U.S. Congressman	District 2	400 S. Virginia St., Suite 502	Reno	NV	89501
Honorable	Jon	C.	Porter	U.S. Congressman	District 3	2501 North Green Valley Pkwy, Suite 112D	Henderson	NV	89014
Honorable	Jon		Hickman	Mayor	Ely City Hall	501 Mill Street	Ely	NV	89301
Honorable	Michael	J.	Franzola	Mayor	City of Elko	1751 College Avenue	Elko	NV	89801
Honorable	Josephine	E.	Thaut	Mayor	City of West Wendover	801 Alpine Street	West Wendover	NV	89883
Mr.	Brent		Eldridge	Commissioner, Chair	White Pine County Board of Commissioners	801 Clark Street, County Courthouse	Ely	NV	89301
Ms.	Laurie		Carson	Commissioner	White Pine County Board of Commissioners	801 Clark Street, County Courthouse	Ely	NV	89301
Mr.	Gary		Lane	Commissioner	White Pine County Board of Commissioners	801 Clark Street, County Courthouse	Ely	NV	89301
Mrs.	Raleene		Mailey	Commissioner	White Pine County Board of Commissioners	801 Clark Street, County Courthouse	Ely	NV	89301
Mr.	David		Pound	Commissioner	White Pine County Board of Commissioners	801 Clark Street, County Courthouse	Ely	NV	89301
Mr.	Warren		Russell	Commissioner, Chair	Elko County Board of Commissioners	575 Idaho Street, County Courthouse	Elko	NV	89801
Ms.	Sheri		Eklund-Brown	Commissioner	Elko County Board of Commissioners	575 Idaho Street, County Courthouse	Elko	NV	89801
Mr.	John		Ellison	Commissioner	Elko County Board of Commissioners	575 Idaho Street, County Courthouse	Elko	NV	89801
Mr.	Charles		Myers	Commissioner	Elko County Board of Commissioners	575 Idaho Street, County Courthouse	Elko	NV	89801
Mr.	Mike		Nannini	Commissioner	Elko County Board of Commissioners	575 Idaho Street, County Courthouse	Elko	NV	89801
Honorable	Orrin	G.	Hatch	U.S. Senator	8402 Federal Building	125 South State St.	Salt Lake City	UT	84138
Mr.	Bill		Castle	Staffer	104 Hart Office Building		Washington	DC	20510
Mr.	Nate		Graham	Staffer	431 Dirksen Building		Washington	DC	20510
Mr.	Steve		Peterson	Staffer	124 Cannon Building		Washington	DC	20515
Mr.	Brad		Mollet	Staffer		1323 Longworth HOB	Washington	DC	20515
Mrs.	Rachel		Dresen	Staffer	2436 Rayburn House Office Building		Washington	DC	20515
Ms.	Sandy		Kester	Staffer	8402 Federal Building	125 South State Street	Salt Lake City	UT	84138
Ms.	Mary		Maughan	Staffer	Wallace F. Bennett Federal Building	125 South State Street, Suite 4225	Salt Lake City	UT	84138
Mr.	Peter		Jenks	Staffer	1017 Federal Building	324 25th Street	Ogden	UT	84401
Mr.	Rob		Roake	Staffer		240 East Morris Avenue #235	Provo	UT	84115
Mr.	Corey		Norman	Staffer		51 University Ave, Suite 319	Provo	UT	84606
Honorable	Robert		Bennett	U.S. Senator	Wallace F. Bennett Federal Building	125 South State St., Ste. 4225	Salt Lake City	UT	84138
Honorable	Rob		Bishop	U.S. Congressman	1017 Federal Building	324 25th St., Ste. 1017	Ogden	UT	84401
Honorable	Jim		Matheson	U.S. Congressman		240 East Morris Avenue #235	South Salt Lake	UT	84115
Honorable	Christopher		Cannon	U.S. Congressman		51 S. University Ave, Suite 319	Provo	UT	84606
Honorable	Jon		Huntsman, Jr.	Governor		State Capitol Complex, East Office Bldg., Ste E220	Salt Lake City	UT	84114

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<i>Prefix</i>	<i>First</i>	<i>MI</i>	<i>Last</i>	<i>Title</i>	<i>Organization Name</i>	<i>Address</i>	<i>City</i>	<i>State</i>	<i>Zip</i>
Federal/State Agencies									
Ms.	Christa		Coulter	Clearinghouse Coordinator	Nevada State Clearinghouse Department of Administration	209 E Musser St., Room 200	Carson City	NV	89701
Ms.	Patricia		Erwin	District Ranger	U.S. Forest Service	825 Avenue E	Ely	NV	89301
Mr.	Robert		Williams	State Supervisor	U.S. Fish and Wildlife Service Nevada Ecological Field Office	1340 Financial Blvd, Suite 234	Reno	NV	89502
Mr.	Ron		Wenker	State Director	BLM State Office	1340 Financial Blvd	Reno	NV	89502
Mr.	Wayne		Nastri	Regional Administrator	U.S. EPA, Region IX Office of the Regional Administrator	75 Hawthorne Street	San Francisco	CA	94105
Mr.	Willie	R.	Taylor	Director	Office of Environmental Policy and Compliance U.S. Department of the Interior	Main Interior Building, MS2462, 1849 C Street, NW	Washington	DC	20240
					Bureau of Reclamation	705 N. Plaza Street Room 320	Carson City	NV	89701
					USDA Forest Service - Ruby Mtn/Jarbridge Ranger Stations	P.O. Box 246	Wells	NV	89835
					U.S. Forest Service - Humboldt/Toiyabe National Forest	2035 Last Chance Road	Elko	NV	89801
Ms.	Pam		Wilcox		State of Nevada, Division of Lands	901 South Stewart Street, Suite 5003	Carson City	NV	89701
Mr.	Steven		Arenson	Environmental Officer	Air Force Western Regional Environmental Office	50 Fremont Street, Suite 2450	San Francisco	CA	94105
Mr.	Chris		Hanefeld	PA Officer	BLM - Ely		Ely	NV	89301
Mr.	Dan		Netcher	Field Office Manager	BLM-Ely Field Office	702 North Industrial Way	Ely	NV	89301
Mr.	Randy		Johnson	Aviation Manager	BLM - Ely/Las Vegas	P.O. Box 237	Caliente	NV	89008
Ms.	Tamra		Hawthorne	Elko Wilderness Director	BLM - Elko	3900 E. Idaho Street	Elko	NV	89801
Mr.	Norman	M.	Rockwell	Civil Engineer	BLM - Elko District Office	3900 East Idaho Street	Elko	NV	89801
Mr.	Cameron		Dingman	Unit Aviation Manager	BLM-Elko Field Office	3900 East Idaho Street	Elko	NV	89801
Ms.	Helen		Hankins	Field Office Manager	BLM-Elko Field Office	3900 East Idaho Street	Elko	NV	89801
Mr.	Dave		Pattaretti	Assistant Field Director	BLM-Elko Field Office	3900 East Idaho Street	Elko	NV	89801
Mr.	Ronald		James	SHPO	Historic Preservation Office	100 N Stewart Street Capitol Complex	Carson City	NV	89701
	1. Leo		Drozdoft	Administrator	Nevada Division of Env Protection State of Nevada, Capitol Complex	901 South Stewart Street, Suite 4001	Carson City	NV	89701
					Nevada Division of Emergency Management	2525 S Carson St	Carson City	NV	89711
					Nevada Department of Wildlife	60 Youth Center Road	Elko	NV	89801
Mr.	Kenneth		Mayer	Director	Nevada Department of Wildlife Reno Headquarters	1100 Valley Road	Reno	NV	89512
	Wilson	G.	Martin		Utah State Historical Society	300 South Rio Grande	Salt Lake City	UT	84101
	Ronald	M.	James		Nevada State Historic Preservation Office	100 North Stewart Street	Carson City	NV	89701
	Richard		Currit		Wyoming State Historic Preservation Office	2301 Central Avenue, Barret Building Third Floor	Cheyenne	WY	82002
Ms.	Alice		Baldrica		State Historic Preservation Office	100 North Stewart Street	Carson City	NV	89701
Ms.	Rebecca		Palmer		State Historic Preservation Office	100 North Stewart Street	Carson City	NV	89701
	Cornelia	L.	Keatinge	Program Analyst	Advisory Council on Historic Preservation	12136 West Bayaud Ave., Suite 330	Lakewood	CO	80228
					National Trust for Historic Preservation Mountains/Plains Regional Office (Utah)	910 16th Street, Suite 1100	Denver	CO	80202
	Randall		Smith		Idaho Fish and Game	PO Box 428	Jerome	ID	83338
					Division of Water Planning	901 South Stewart Street, Ste 2002	Carson City	NV	89701
					National Trust for Historic Preservation Western Region (Nevada)	The Hearst Building, 5 Third Street, Ste 707	San Francisco	CA	94103
	Zane	L.	Marshall	Environmental Resources Manager	Southern Nevada Water Authority	100 City Parkway, Suite 700	Las Vegas	NV	89193

Distribution List

Prefix	First	MI	Last	Title	Organization Name	Address	City	State	Zip
American Indians									
	Lawrence		Bear	Chairman	Skull Valley Band of Goshute Indians	3359 S. Main Street, #808	Salt Lake City	UT	84115
	Alonzo		Coby	Chairman	Shoshone-Bannock Tribes of the Fort Hall Reservation	P.O. Box 306	Fort Hall	ID	83203
	Rupert		Steele	Chairman	Confederated Tribes of the Goshute Indian Reservation	P.O. Box 6104	Idpah	UT	84034
	Dennis		Bill	Chairman	Yomba Shoshone Tribe	HC 61 Box 6275	Austin	NV	89310
	Diana		Buckner	Chairperson	Ely Shoshone Tribe	16 Shoshone Circle	Ely	NV	89301
	Carrie		Dann		Western Shoshone Defense Project	P.O. Box 211308	Crescent Valley	NV	89821
	Bruce		Parry	Chairperson	Northwestern Band of Shoshoni Nation	862 South Main, Suite 6	Bingham City	UT	84302
	Barbara		Durham	THPO	Timbisha Shoshone Tribe	P.O. Box 206	Death Valley	CA	92328
	Davis		Gonzales	Chairperson	Te-Moak Tribe of Western Shoshone	525 Sunset Street	Elko	NV	89801
	Julie		Stevens	Vice- Chairperson	Wells Band Council	P.O. Box 809	Wells	NV	89835
	Ivan		Posey	Chairman	Eastern Shoshone Tribe	P.O. Box 538	Fort Washakie	WY	82514
	Anthony		Addison, Sr.	Chairman	Arapaho Tribe of Wind River Reservation	P.O. Box 396	Fort Washakie	WY	82514
	Joe		Kennedy	Chairman	Timbisha Shoshone Tribe	P.O. Box 786	Bishop	CA	93514
	Ernest		House, Sr.	Chairperson	Ute Mountain Ute Tribe	P.O. Box 248	Towaoc	CO	81334
	Robert		Marcoio	Superintendent	Bureau of Indian Affairs - Eastern Nevada Agency	1555 Shoshone Circle	Elko	NV	89801
	James		Steele, Jr.	Chairman	Confederated Salish & Kootenai Tribes of the Flathead Reservation	P.O. Box 278	Pablo	MT	59855
	Darren		Daboda	Chairperson	Moapa Band of Paiutes	P.O. Box 340	Moapa	NV	89025
	Alfreda	L.	Mitre	Chairperson	Las Vegas Paiute Tribal Council	Number One Paiute Drive	Las Vegas	NV	89106
	Sheryl		Mose Temock	Chairperson	South Fork Band Council	21 Lee Unit B 13	Spring Creek	NV	89815
	Evelyn		James	Chairman	San Juan Southern Paiute Tribe	P.O. Box 1989	Tuba City	AZ	86045
	Lynett		Piffero	Chairperson	Elko Band Council	1745 Silver Eagle	Elko	NV	89801
	Debra		Blossom	Chairperson	Western Shoshone Committee	P.O. Box 425	Owyhee	NV	89832
	Nancy		Egan	Chairman	Shoshone-Paiute Tribes of the Duck Valley Reservation	P.O. Box 219	Owyhee	NV	89832
	Norman		Cooleyate	Governor	Pueblo of Zuni	P.O. Box 339	Zuni	NM	87327
	Ruby		Sam	Chairperson	Duckwater Shoshone Tribe	P.O. Box 140068	Duckwater	NV	89314
	Joe		Shirley	President	Navajo Nation	P.O. Box 9000	Window Rock	AZ	86515
	Benjamin		Nuamasa	Chairman	Hopi Tribe	P.O. Box 123	Kykotsmovi	AZ	86039
	Lora		Tom	Chairperson	Paiute Indian Tribe of Utah	440 North Paiute Drive	Cedar City	UT	84720
	Orla		Segundo	Chairperson	Kaibab-Paiute Tribe	HC 65 Box 2	Fredonia	AZ	86022
	Carl		Venne	Chairman	Crow Tribe of Montana	P.O. Box 159	Crow Agency	MT	59022
	Curtis		Cesspooch	Chairperson	Ute Indian Tribe	P.O. Box 190	Fort Duchesne	UT	84026
	Mary Jane		Yazzie	Director	White Mesa Ute Council	P.O. Box 7096	Blanding	UT	84511
	Michael		Young	Chairman	Battle Mountain Band Council	37 Mountain View Drive	Battle Mountain	NV	89820
	Arla		Crutcher	Chairperson	Fort McDermitt Paiute-Shoshone	P.O. Box 457	McDermitt	NV	89421
	Alan		Melendez	Chairperson	Reno-Sparks Indian Colony	89 Colony Road	Reno	NV	89502
	Waldo		Walker	Chairman	Washoe Tribe of Nevada-California	919 Highway 395 South	Gardnerville	NV	89410
	Mervin		Wright	Chairman	Pyramid Lake Paiute Tribe	P.O. Box 256	Nixon	NV	89424
	Vince		Conway	Chairman	Verington Paiute Tribe	171 Campbell Lane	Verington	NV	89447
	Earl		Old Person	Chairman	Blackfeet Tribe	P.O. Box 850	Browning	MT	59417
					Northwestern Band of Shoshone Nation, Pocatello Tribal Office	427 N. Main Street, Ste. 101	Pocatello	ID	83204

Distribution List

Prefix	First	MI	Last	Title	Organization Name	Address	City	State	Zip
Concerned Parties									
Mr.	Ron		Williams	Airport Manager	Ely Airport		Ely	NV	
Mr.	Mike	L.	Baughman	President	Intertech Services Corporation		Carson City	NV	
Mr.	Luke		Papez		US Power Development		St. Louis	MO	
Mr.	Tim		Carlson	Managing Partner	Nevada Wind Company		Las Vegas	NV	
				Eastern Nevada Office	Friends of Nevada Wilderness		Ely	NV	
					Soaring Society of America		Hobbs	NM	
Mr.	Dan		Callaghan		Ely Soaring LLC		Ely	NV	
Ms.	Abby		Johnson				Carson City	NV	
Ms.	Jo Anne		Garrett				Baker	NV	
Chambers of Commerce									
					White Pine Chamber of Commerce (Ely, McGill)	636 Aultman St	Ely	NV	89301
					Elko Chamber of Commerce	1405 Idaho St	Elko	NV	89801
					West Wendover Tourism and Convention Bureau	735 Wendover Blvd	West Wendover	NV	89883
					Wells Chamber of Commerce	P.O. Box 615	Wells	NV	89835
Libraries									
					White Pine County Public Library	950 Campton St	Ely	NV	89301
					Elko County Library	720 Court Street	Elko	NV	89801
					West Wendover Branch Library	590 Camper Drive	West Wendover	NV	89883
					McGill Senior Center	1 Ave. K	McGill	NV	89301
					Wells Branch Library	208 Baker Street, PO Box 691	Wells	NV	89835
Scoping Meeting Attendees									
	Kyle		Hansen		BLM, Ely		Ely	NV	
	Gary		Lane				Ely	NV	
	Denzar		Dahl				Ely	NV	
	Karen		Rajala				Ely	NV	
	Wes		Brown				Elko	NV	
	Ali		heliot		Elko Daily Free Press		Elko	NV	
	Mark		Milburn				St Louis	MO	
	Matt		Tuna		Senator Reid's office		Reno	NV	
	Steve		Dondero		BLM		Elko	NV	
	Sheri		Eklund-Brown		Elko County Commissioner		Elko	NV	
	Bryan		Cassadore				Elko	NV	
	Amos		Murphy				West Wendover	NV	
	Ed		Naranjo				Ibapah	UT	
	Christine		Steele				Ibapah	UT	
Hearing Attendees									
	Karen		Rajala		White Pine County		Ely	NV	
	Doris		Metcalf				Ely	NV	
	Ronald	L.	Taylor				Ely	NV	
	Chris		Hanefeld		BLM, Ely District		Ely	NV	
	Jane		Peterson		BLM, Ely Field Office		Ely	NV	
	John		Plestina		Ely Times		Ely	NV	
	Lorrie		West		BLM, Wells Field Office		Elko	NV	
	Bryan		Hockett		BLM, Wells Field Office		Elko	NV	
	Ron		Williams		Yelland Field Airport Manager		McGill	NV	
	James		Petersen		Wendover Air Field		Wendover	UT	

INDEX

INDEX

Annoyance, 3-12, 3-13, 3-14, 3-15, 3-16, 3-20, 4-4, 4-5, 4-7, 4-10
Archaeological, 3-41, 3-42, 3-43, 3-46, 3-58, 3-64, 3-65, 4-22, 4-23, 4-24, 4-29, 5-5
Bird/Wildlife Aircraft Strike Hazard (BASH), 3-30, 3-31, 4-11, 4-16
Chaff, ES-1, ES-2, ES-3, ES-4, ES-5, ES-6, ES-7, 1-1, 1-4, 1-6, 1-7, 1-9, 1-10, 1-12, 2-1, 2-2, 2-8, 2-11, 2-23, 2-24, 2-25, 2-26, 2-27, 2-31, 2-32, 3-1, 3-2, 3-5, 3-7, 3-25, 3-27, 3-28, 3-38, 3-42, 3-44, 3-64, 4-1, 4-2, 4-3, 4-12, 4-15, 4-19, 4-21, 4-22, 4-23, 4-26, 4-27, 4-28, 4-29, 5-4, 5-5, 5-6
Consultation, 1-12, 2-8, 2-27, 2-28, 2-29, 3-43, 3-46, 3-49, 3-54, 3-55, 3-56, 3-57, 3-58, 3-61, 3-63, 3-64, 3-65, 5-4, 5-6
Fire, 3-5, 3-23, 3-24, 3-25, 3-26, 4-11, 4-12, 4-13, 4-19
Flares, ES-1, ES-2, ES-3, ES-4, ES-5, ES-7, 1-1, 1-4, 1-6, 1-7, 1-9, 1-10, 1-12, 2-1, 2-2, 2-8, 2-11, 2-23,
Low-Income, 3-52, 3-53, 3-54, 4-26, 4-27, 2-28, 5-6
Minority, 3-52, 3-53, 3-54, 4-26, 4-27, 2-28, 5-6
Mishaps, ES-6, 2-31, 3-22, 3-27, 3-28, 3-29, 3-31, 3-61, 4-12, 4-14, 4-15
Military Training Route (MTR), 2-25, 2-26, 3-2, 3-6, 3-9, 3-19, 4-2
National Register of Historic Places, 3-42, 4-22, 4-24
Population, ES-7, 2-32, 3-11, 3-20, 3-29, 3-30, 3-34, 3-39, 3-45, 3-50, 3-52, 3-53, 3-54, 3-58, 3-67, 3-68, 3-69, 4-4, 4-5, 4-7, 4-10, 4-13, 4-14, 4-19, 4-25, 4-26, 4-27, 5-6
Public Involvement, ES-4, 2-29
Restricted Area, 2-3, 2-5, 2-7, 2-25, 3-7, 3-8, 3-31, 4-1, 4-3
Safety, ES-5, ES-6, 1-7, 1-11, 2-3, 2-26, 2-31
Scoping, ES-4, ES-5, 1-11, 2-9, 2-28, 2-30, 2-31, 2-32, 3-2, 3-28, 3-50, 3-54, 4-15, 4-25, 5-2
Sensitive Species, 5-3
Sonic Boom, ES-6, 2-22, 2-31, 2-33, 2-34, 3-12, 3-13, 3-14, 3-17, 3-21, 3-42, 3-43, 3-44, 3-45, 4-2, 4-4, 4-7, 4-8, 4-10, 4-11, 4-17, 4-18, 4-20, 4-21, 4-23, 4-24, 4-25, 4-27, 4-29, 4-30, 5-4, 5-6
Sortie-Operations, ES-3, ES-5, 2-1, 2-15, 2-16, 2-17, 2-18, 2-19, 2-20, 2-22, 2-23, 2-27, 2-33, 3-8, 3-17, 4-1, 4-2, 4-3, 4-7, 4-17, 4-22, 4-23, 5-4
Testing, ES-1, 1-1, 1-4, 1-7, 1-8, 2-4, 2-26, 3-7, 3-8
United States Environmental Protection Agency (USEPA), 3-4, 3-15, 3-16, 3-41, 4-5, 4-10, 4-27, 4-28
Visual Resources, 3-36, 3-37, 4-17, 4-19
Wilderness, ES-4, ES-6, 2-15, 2-33, 3-17, 3-20, 3-30, 3-31, 3-32, 3-35, 3-36, 3-37, 4-4, 4-5, 4-6, 4-7, 4-18
Wildlife, ES-5, ES-6, 2-31, 2-33, 3-3, 3-17, 3-20, 3-22, 3-23, 3-28, 3-30, 3-31, 3-38, 3-39, 3-40, 3-66, 4-4, 4-5, 4-6, 4-8, 4-16, 4-20, 4-21, 4-30
Vortices, 4-15, 4-16

APPENDIX A
DRAFT EIS COMMENTS AND RESPONSES

INTRODUCTION

Appendix A contains comments received from federal, state, and local agencies, private organizations, and the general public during the public hearings on the draft Environmental Impact Statement (EIS) and during the entire draft EIS comment period. The comment period began on August 15, 2008 and closed on November 13, 2008. In accordance with the National Environmental Policy Act (NEPA), public and agency comments were reviewed and incorporated into this final EIS. These public and agency comments will be used by the decisionmaker for the project evaluation.

Comment Response Process

Comments on the draft EIS were generated through written correspondence and oral testimony during the draft EIS public comment period. The following process was used for reviewing and responding to these comments:

- All comment letters and oral testimony were reviewed carefully. Each comment letter was assigned a unique number. Comments in the public transcripts received a response code. All substantive comments letters and oral testimony include commentor's name.
- Within each comment letter or oral testimony, substantive comments were identified and bracketed. These bracketed comments were then reviewed by a resource specialist and provided a response. Three guidelines were used for determining substantive comments.
 1. The comment questioned the proposed action or other components of the proposal.
 2. The methodology of the analysis or results were questioned.
 3. The use, adequacy, and/or accuracy of data were questioned.

Locating Your Comment Letter or Public Testimony

The comment letters are printed in numerical order; a total of 22 letters were received. The order in which the letters are presented begins with written comments from the public followed by comments from government or agencies and ending with oral comments made at the public hearing. Public comment letters begin at 0001; government or agency comment letters begin at 0010.

Locating Responses to Comments

All comments were given a response code based on the resource. Fifteen resource or topics were identified from all of the comments received during the public comment period. Response codes are printed next to one or more bracketed areas in the right margin of the comment letters and public transcripts. For example, substantive comments regarding concerns about cultural resources were

identified with response code CR; comments regarding land use were identified with response code LU. The resource categories and response codes are listed below. Due to the similarity of some comments, some comments were assigned the same response.

<i>Resource</i>	<i>Response Code</i>
American Indians	AI
Airspace Management	AM
Biological Resources	BR
Cultural Resources	CR
Cumulative	CU
Environmental Justice	EJ
General	GE
Land Use	LU
National Environmental Policy Act	NEPA
Noise	NO
Proposed Action and Alternatives	PA
Public Involvement	PI
Purpose and Need	PN
Safety	SA
Socioeconomics	SO

**White Elk Military Operations Area
Written and Oral Comments**

<i>Comment/ Letter #</i>	<i>Commentor</i>	<i>Response #</i>	<i>Response Code</i>	<i>Response</i>
0001	Paul Bottari, Bottari Realty Inc	P-1	SO	As supported by Section 4.8.1 of the Environmental Impact Statement (EIS), there is little to suggest that airspace modifications under the White Elk MOA proposal would impact land values in White Pine or Elko Counties. The complex nature of property valuation factors makes any estimation of the potential effects of airspace modifications on land values highly speculative. Ranching operations and communities have existed and functioned under the existing Currie/Tippet Air Traffic Control Assigned Airspace (ATCAA) as well as numerous other airspace units in the West. Military overflight activities have not been influential in land values in these areas. Rather, other socioeconomic factors, such as business activity, employment, interest rates, and land scarcity (or availability) are much more likely to affect property values. Neither the increased flight training in the existing Currie/Tippet ATCAA or introduction of training activities under the proposed action is expected to increase or decrease the value of property under the airspace.
0002	Karl E. Lind	P-2	PA	Maps throughout Chapters 1 and 2 of the EIS demonstrate that existing Utah Test and Training Range (UTTR) airspace covers western Utah; this area is not “open” for new airspace. As discussed in Section 2.1 of the EIS, the Air Force considered several alternatives for locating the new training airspace. This alternative identification process used six criteria including the relationship to existing military airspace. This process also evaluated locations for their potential conflicts with airports, jet routes, and civil aviation around the UTTR airspace. This process led to the definition of the proposed White Elk MOA which underlies existing airspace.
0002	Karl E. Lind	P-3	PA	The proposed White Elk MOA does not overlie Ruby Valley or Clover Valley. 388 FW training would not occur over Ruby Valley which is located west of this airspace proposal and existing ATCAA, nor over Clover Valley located northwest. Refer to Figure 3.10-1 in the EIS.
0002	Karl E. Lind	P-4	PA	No portion of the White Elk MOA extends further west than existing airspace consisting of the Currie/Tippet ATCAA. As presented in Section 4.9 of the EIS, none of the affected area is even “moderately densely inhabited”. Rather, estimated population under the proposed airspace within Elko and White Pine Counties totals approximately 168 persons, or about 1 person per square nautical mile (nm). Also see response for P-3.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0003	Paula Carson	P-5	AM	The lands underlying the proposed White Elk MOA have been and continue to be subject to air traffic in existing military airspace and from civil and commercial aviation. As related through Chapters 1 and 2 of the EIS, the Currie/Tippet ATCAA overlies the area at 18,000 feet Mean Sea Level (MSL) and currently supports 548 sorties annually. Low-altitude military air traffic occurs along three Military Training Routes (MTRs) that cross the area with lower flight limits of the surface to 200 feet above ground level (AGL) (Section 2.3.1). In addition, both low and high altitude civil and commercial air traffic currently occurs in the region proposed for the White Elk MOA. All of these activities currently generate aircraft noise; military flight activity produces noise levels less than day-night average sound level (DNL) 45dB. Noise levels of DNL 45 dB have a very low potential for annoyance.
0003	Paula Carson	P-6	PN	The need for the proposed White Elk MOA stems from the incapacity of existing airspace to ensure adequate training for pilots of the 388 FW. Existing UTTR airspace cannot provide adequate training due to limitations imposed by test and evaluation priorities. Therefore, the purpose of this proposed action is to provide reliable training airspace connected to the UTTR to support 388 FW training requirements. The purpose and need for this airspace proposal can be found in sections 1.3 and 1.4 of the EIS, respectively.
0003	Paula Carson	P-7	NO	Noise from sonic booms is not expected to exceed CDNL 49 dB (or DNL 53 dB). The Air Force estimates one sonic boom could be heard about once every two flying days at any given location under the airspace; fewer booms would be audible on the edges of the airspace, especially in the north and south. Section 4.3.1 of the EIS details the findings of the Noise analysis and Appendix G describes how noise effects were calculated.
0004	Delaine Spilsbury	P-8	BR	The EIS (Section 3.3, <i>Assessing Aircraft Noise Effects</i> and Appendix F) addresses the potential for the proposed action to affect the health of persons and animals under the airspace. Numerous studies cited in the EIS (Harris 1997; Schwartze and Thompson 1993) concluded that noise from military overflight, even at low-altitude, does not adversely affect the health of humans. Similarly, the EIS indicates that no evidence of long-term or significant effects on mammals has been demonstrated. Studies on noise impacts to mammals exposed to military aircraft noise and sonic booms find that mammals initially react with a startle effect but habituate to the noise (Westman and Walters 1981; Harrington and Veitch 1991; Workman <i>et al.</i> 1992). Refer to Section 4.6.1 of the EIS for the discussion of this topic.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0004	Delaine Spilsbury	P-9	EJ SO	No one was targeted; the proposed airspace was identified through a systematic process outlined in Section 2.1 of the EIS. Analysis of the effects on area visitors and glider activity, as presented in sections 4.2 and 4.8, indicate the impacts would be minor. Also, the Air Force would mitigate potential impacts with gliders during major glider events. See response A-50.
0004	Delaine Spilsbury	P-10	PA	No aspect of the White Elk MOA proposal would involve ground disturbance. All activities would occur in the airspace. The purpose and need for this airspace proposal can be found in Sections 1.3 and 1.4 of the EIS, respectively.
0005	Richard A. Spilsbury	P-11	AM	No airspace currently available to civil aviation will be eliminated as a result of the proposed action. As detailed in Section 4.2.1 of the EIS, civil aviation, including gliders would retain access under VFR conditions to the White Elk MOA airspace. There are no restrictions against glider operations in a MOA.
0005	Richard Spilsbury	P-12	SO	Refer to response P-1.
0005	Richard Spilsbury	P-13	PA	Section 4.5 of the EIS addresses potential impacts to lands, including wilderness and recreation areas. None of the effects of the proposed action would significantly degrade the characteristics of these areas. Refer to Section 4.5.1 of the EIS.
0005	Richard Spilsbury	P-14	SO	None of the impacts defined in the EIS indicate that visitation and in-migration would be affected by the proposed action. The factors that could influence the experience of visitors or in-coming residents to an area or region are varied and include the nature of attractions, proximity to population centers, air and road access, amenities, climate, costs, and overall economic conditions. As indicated in Sections 4.2 and 4.8 of the EIS, the effects of proposed aircraft activity to civilian and commercial air travel in the region under the White Elk MOA and overlying Currie/Tippet ATCAA would be only a minor effect, at most, on visitors or residents.
0005	Richard Spilsbury	P-15	BR	Numerous studies cited in the EIS (Harris 1997; Schwartze and Thompson 1993) concluded that noise from military overflight, even at low-altitude, does not adversely affect the health of humans. Similarly, the EIS indicates that no evidence of long-term or significant effects on mammals has been demonstrated. See response P-8.
0005	Richard Spilsbury	P-16	NO	The EIS provides a thorough analysis of sonic booms and identifies overpressures and their potential effect to structures. In Section 4.3.1 of the EIS, the potential peak overpressures are described, and the analysis established that the average peak overpressure would be less than 1 pound per square foot. This level of overpressure would not be expected to damage most structures including old or historic buildings. Appendix F in the EIS also discusses sonic booms, overpressures, and the potential for structural damage.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0005	Richard Spilsbury	P-17	BR	Section 4.6.1 of the EIS summarizes the results of studies on noise impacts to mammals exposed to military aircraft noise and sonic booms. No long-term physical or behavioral effects are expected to occur. Refer to response P-8.
0005	Richard Spilsbury	P-18	SA BR	<p>The Air Force conducted a detailed environmental analysis on the use of chaff and flares in the MOA/ATCAA. This assessment relied upon substantial studies of the effects of chaff and flares on the environment and is presented in Appendices D and E in the EIS. Overall, the EIS concludes that the use of chaff and flares in accordance with all safety and environmental procedures and restrictions would not result in a significant impact to the environment. Although some residue from the chaff and flare mechanisms would fall to the ground, it is not expected to accumulate. Rather, as described in the draft EIS (pages 2-24 to 2-25); the chaff would be distributed over a very broad area under the MOA/ATCAA airspace (i.e., estimated concentrations of 0.08 ounces per acre). Residual materials resulting from chaff and flare use have not been discarded; rather, these residues are the byproducts of using countermeasures for their intended purpose during military training activities.</p> <p>To prevent fires from flares, the Air Force employs standard minimum altitudes. When over other than government-owned or controlled lands, the Air Force has defined specific minimum altitudes for flare release at 2,000 feet AGL (AFI 11-214, 22 Dec 05) minimizing the risk of flare-caused fires. With variations in the terrain underlying the White Elk MOA, the floor, or minimum release altitude, would be no lower than 3,100 feet AGL, providing an extra margin of safety against flare-caused fires. The analysis in the EIS clearly demonstrates that flare burn times and the altitude of release would be many times greater than required for the flare to burn completely before touching the ground. Therefore, the EIS concluded that the restrictions on flare use would be sufficient to make the risk of fire negligible at most. For the discussion on fire risk and management, refer to Section 3.4.1 of the EIS.</p> <p>Well established studies referenced in the EIS demonstrate that these hair-like strands of chaff are not readily visible and pose no inhalation risk to persons or animals. To potentially inhale or ingest these fibers, a person would need to snort or bite the ground. If inhaled into the nose, the particles would be expelled by sneezing. If ingested, normal body functions would process and expel the particles (<i>Environmental Effects of Self Protection Chaff and Flares, Final Report, August 1997</i>). This report is available on the world wide web at www.acplanning.org.</p>

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0005	Richard Spilsbury	P-19	AI	The Air Force followed the requirements for government-to-government consultation with American Indian tribes. A total of 37 tribes, colonies, and other organizations who live in the affected area or who had potential ancestral ties to the area in the past were contacted by letter and phone. These same groups were notified of the availability of the draft EIS and public meetings. None of these groups indicated that the proposal would affect traditional activities or locations.
0005	Richard Spilsbury	P-20	PN	The F-16 pilots at Hill Air Force Base (AFB) form an integral part of the United States Air Force's Aerospace Expeditionary Force, expected to deploy to and fight around the world. Success in combat means F-16 pilots must confront the world's most sophisticated hostile air-to-air tactics and anti-aircraft systems. To ensure such success, pilots must train as they would fight, and they require sufficient access to training airspace that provides a realistic combat environment in order to complete defined requirements and ensure combat readiness. Chapters 1 and 2 in the EIS demonstrate the current inability of Hill AFB F-16 pilots to meet training and readiness requirements due to a lack of available airspace. Use of UTTR is predominately for test and evaluation activities which dominate its schedule. As such, they need additional airspace that provides access and flexibility.
0005	Richard Spilsbury	P-21	PI	On August 15, 2008, the draft EIS was released for public review and comment. A Notice of Availability (NOA) of the draft EIS was published in the <i>Federal Register</i> . On or shortly after that date, the availability of the draft EIS and the dates, locations, and times of the public hearings were published in the following newspapers that service the affected area: <i>Ely Times</i> , <i>Elko Free Press</i> , <i>Salt Lake Tribune/Deseret News</i> , <i>Wendover Times</i> , and <i>Standard Examiner</i> . Also, all those individuals and organizations that requested a copy of the EIS were sent one at this time and notified of the public hearings. In addition, Hill AFB directly invited American Indian groups to these meetings. The period of public review was initially scheduled to conclude September 29, 2008 but was extended until November 13, 2008 to allow additional opportunity for comment. Notice of the extension was made through newspaper advertisements, <i>Federal Register</i> listing, and individual postcard mailings to all those on the EIS mailing list. The complete public involvement process is presented in Chapter 2 and Appendix B of the EIS.
0006	Tonia Harvey	P-22	PA	The proposed action is the White Elk Military Operations Area (White Elk MOA), not Supersonic Operations Area. As presented in Section 2.3.3 of the EIS, out of the 9,590 annual sortie-operations proposed for the White Elk MOA, only 16 percent would involve brief periods of supersonic flight and all that activity would occur above 18,000 feet MSL in the existing ATCAA. Baker, Nevada lies over 40 miles southeast of the proposed White Elk MOA and should not be subject to sonic booms from activity in the existing ATCAA. Refer to Section 4.3.1 of the EIS for the Noise analysis.

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0006	Tonia Harvey	P-23	NO	The EIS provides a thorough analysis of sonic booms and identifies overpressures and their potential effect to structures. On page 4-10 of the draft EIS, the potential peak overpressures are described and it was established that the average peak overpressure would be less than 1 pound per square foot with a small probability of booms exceeding 6 or 7 pounds per square foot. This level would not be expected to damage most structures including old or historic buildings. The duration of a sonic boom is typically between 0.1 and 0.2 seconds. None of these overpressures would have deleterious health effects. The predominant effect of sonic booms on people and wildlife is annoyance. Appendix F included in the EIS also discusses sonic booms and overpressures.
0006	Tonia Harvey	P-24	NO	Section 4.5.1 of the EIS addresses impacts of sonic booms to wilderness and wilderness study areas under the proposed White Elk MOA. As the EIS indicates, these areas would be exposed to sonic booms, but they would be fewer than 0.4 booms per day. Overall noise levels in the wilderness areas would not exceed DNL 53 dB. As the EIS discusses, such activities and impacts would be temporary and not change the characteristics of these areas, especially since they already underlie existing airspace. A discussion of noise impacts to wildlife can be found in Section 4.6.1 of the EIS. Also see response P-8.
0006	Tonia Harvey	P-25	EJ	McGill Elementary is located on the southernmost tip of the MOA/ATCAA airspace where it would be subject to far less than 0.4 booms per day as could occur at the center of the airspace. All of the areas mentioned (McGill, Cherry Creek, Lages Station and Currie) were analyzed for subsonic and supersonic noise. All were demonstrated to not be subjected to noise levels above 49 CDNL (approximately DNL 53 dB).
0006	Tonia Harvey	P-26	SO	See response P-1.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0006	Tonia Harvey	P-27	SO	<p>The findings in Section 4.8 of the EIS indicate no adverse impacts to development in White Pine or Elko Counties. There would be no restrictions to land development in either of the counties. The floor of the MOA would be well above any future power plants or wind-energy projects. In addition, the Air Force considered proposed plans for future air service between the Ely and Elko airports and altered their initial MOA proposal so that the approach path to the Ely airport would not be affected.</p> <p>There is nothing to indicate that this airspace proposal would adversely impact the experience of visitors in the affected counties. Outdoor activities, such as hiking, camping, nature viewing, hunting, and fishing, enjoyed by visitors to the region would not be adversely impacted by sonic booms in the region. Access to local airports would remain unchanged, resulting in no change to airport revenues and associated expenditures by tourists flying into the region. In addition, aviation-related recreational activities such as gliding or ultra-light aircraft would not be significantly impacted. Air traffic currently occurs in the region of the proposed MOA. The rules for flight aviation would remain unchanged for all air traffic including gliders.</p>
0006	Tonia Harvey	P-28	SA BR	See response P-18.
0007	Abigail C. Johnson	P-29	NO	Sonic booms would occur, but on average, 0.4 sonic booms per day (about 1 every 2 flying days) would be heard in the center of the airspace. Due to the nature of operations, far fewer booms would be experienced on the boundaries of the airspace. See responses P-8 and P-25.
0007	Abigail C. Johnson	P-30	NO	The complete discussion on aircraft noise effects, including sonic booms, has been provided in Sections 3.3 and 4.3; further discussion is provided in Appendix F of the EIS. Also, refer to response P-8. In addition, the EIS demonstrates that supersonic noise would annoy less than 1.66 percent of the population under the proposed MOA.
0007	Abigail C. Johnson	P-31	NO	See response P-24.
0007	Abigail C. Johnson	P-32	SO	See response P-27.
0007	Abigail C. Johnson	P-33	SO	There is nothing to indicate that this airspace proposal would impact visitors entering or leaving the affected counties. Access to local airports would remain unchanged, resulting in no change to airport revenues and associated expenditures by visitors flying into the region (refer to Sections 4.2 and 4.8, respectively). Air traffic currently occurs in the region of the proposed MOA. The rules for flight aviation would remain unchanged for all air traffic. The Great Basin National Park does not underlie the airspace under this proposal.
0007	Abigail C. Johnson	P-34	SA	Refer to response P-18.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0007	Abigail C. Johnson	P-35	PN	The purpose and need for this proposal are stated in Chapter 1 of the EIS. Chapter 2 demonstrates the process and criteria used to select the proposed MOA location. Applying these criteria led to the determination that the proposed airspace, which happens to overlay Nevada, provided the most suitable location.
0007	Abigail C. Johnson	P-36	PN	Refer to response P-35. Federal Aviation Administration (FAA) rules preclude this type of airspace over urban areas, but every city has an airport where overflights and noise are more noticeable and frequent than would occur in the White Elk MOA.
0008	Tony Joe, Navajo Nation	NN-1	GE	Thank you for your comment.
0009	Kelly Francis	NN-2	PA	The proposed White Elk MOA is an expansion of UTTR airspace; there are no ground disturbing (i.e., construction) activities that would be associated with establishment of this new airspace unit.
0010	Bryan Fuell, Bureau of Land Management	A-1	LU	The table and figure refer to Goshute Canyon Wilderness.
0010	Bryan Fuell, Bureau of Land Management	A-2	LU	The text has been changed to correct the designation in Section 3.4.1.
0010	Bryan Fuell, Bureau of Land Management	A-3	LU	The text has been changed to correct the designation in Section 3.5.1.
0010	Bryan Fuell, Bureau of Land Management	A-4	LU	Figure 3.5-1 has been corrected; the additional “Elko County” label removed and “reserved” included after the callout for the Nevada Wind Company in the legend.
0010	Bryan Fuell, Bureau of Land Management	A-5	LU	Figure 3.5.-1 has been revised to include labels for the Wilderness and WSAs under the Currie/Tippet ATCAA and proposed White Elk MOA. The legend has been moved to show the location of the WSAs east of the proposed MOA.
0010	Bryan Fuell, Bureau of Land Management	A-6	LU	See response A-5.
0010	Bryan Fuell, Bureau of Land Management	A-7	LU	Information for Elko District WSAs was added to Section 3.5.2 in the final EIS with an additional sentence indicating that the South Pequop, Bluebell, and Goshute Peak WSAs currently experience low-level overflights.
0010	Bryan Fuell, Bureau of Land Management	A-8	LU	Discussion of subsonic noise and wilderness areas has been enhanced in Section 4.5.1 in the final EIS.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0010	Bryan Fuell, Bureau of Land Management	A-9	BR	Section 3.4 of the EIS discusses migratory bird flight activity including raptors. Flight activity in the White Elk MOA would not occur below 3,100 feet AGL – a distance above reported migratory bird patterns. The BASH analysis utilizes the Air Force BAM data which accounts for historical bird strikes and migratory bird patterns.
0010	Bryan Fuell, Bureau of Land Management	A-10	LU	The special status species discussion follows acceptable Air Force format.
0010	Bryan Fuell, Bureau of Land Management	A-11	LU	The discussion of wetlands was included since chaff and flare release is proposed and residues, albeit in negligible amounts, may fall into a wetland area. No change to the document is necessary.
0010	Bryan Fuell, Bureau of Land Management	A-12	LU	The reference is changed to <i>BLM 1985 Approved Wells Resource Management Plan and Environmental Impact Statement</i> in Chapter 6 of the EIS. The Wells Wilderness document does not apply to the text being referenced.
0011	Robert F.Stewart, United States Department of the Interior	A-13	GE	Thank you for your comment.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-14	SO	Section 4.8.1 of the EIS addresses the concerns outlined in your January 7, 2008 letter. Also refer to responses P-1 (property values), P-27 (economic growth/land development), and P-33 (local economy).
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-15	PA	The analysis in the White Elk MOA EIS does not include other non-related airspace units or actions as they do not overlap or impact this particular proposal.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-16	SO	The findings in the EIS indicate no adverse impacts to development in White Pine or Elko Counties. Refer to response P-27.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-17	SO	The effects of flying activities in the proposed White Elk MOA and overlying ATCAA are not expected to produce measurable impacts on the economic conditions in the region. Other factors, such as business activity, employment, and interest rates are much more likely to affect local economic conditions than military aircraft overflights. Refer to responses P-1, P-27, and P-33. The Air Force considers each damage claim on a case-by-case basis. Air Force regulations provide an established process through which damage claims can be submitted, investigated, and resolved. The Air Force can only make payments if authorized to do so by law, and when the claimant supplies adequate documentation supporting the costs claimed.

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0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-18	SO	As discussed in Section 4.8.1 of the EIS, land development would not be restricted. Refer to response P-27.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-19	AM	No aspect of this airspace proposal would place a ceiling restriction on general or commercial aviation aircraft.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-20	AM	While establishing a MOA, such as the White Elk MOA could affect civil aviation traffic when active, it would not prohibit such traffic or limit it substantially. As discussed in Section 4.2.1, the proposed action would have little impact on civil and commercial aviation airspace use; the proposed White Elk MOA avoids most high-level jet routes in the area. Only one route, J-56, transects the existing Currie/Tippet ATCAA, and the subdivisions of the ATCAA allow training operations to continue in other subdivisions without interfering with this route. Plans for scheduled air service between the Ely airport in White Pine County and Elko airport in Elko County were considered. The Air Force altered an original proposal (refer to Section 5.1.3 of the EIS) for the White Elk MOA to accommodate the approach path to the Ely airport for the proposition, thereby mitigating to negligible potential impacts to regional air traffic. Refer to response P-11.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-21	SO	There would be no impacts to proposed or future wind energy projects. As discussed in Section 4.8.1, the floor of the MOA would be well above any future wind-energy projects. See response P-27.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-22	SO	There would be no impacts to proposed or future power plant projects. Refer to response P-27.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-23	AM	See response A-20.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-24	SO	There should be no basis for concern from the County. The findings in the EIS indicate negligible impacts would occur to tourism or revenue lost due to commercial and private aircraft flight restrictions in/out of Ely and Wendover airports as discussed in Section 4.2.1 of the EIS. Refer to responses P-14 and A-20.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-25	AM	See responses A-19 and A-20.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-26	AM	Airspace is a national asset, and UTTR airspace is especially important to aircrew training that ensures protection of our national freedom.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-27	SO	As discussed in Section 4.8.1 of the EIS, this airspace proposal would not create new jobs or impact county populations.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-28	AM	As discussed in Section 4.2.1 of the EIS, airspace corridors would not be restricted or substantially limited by this Air Force proposal. See response A-20.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-29	SA	Hill AFB 75 th Air Base Wing maintains mutual aid agreements with numerous entities and communities as discussed in Sections 3.4.1 and 4.4.1. Emergency response aircraft are given priority status during fire suppression activities. In addition, the FAA would issue a Notice to Airmen (NOTAM) that would curtail Air Force training in the MOA airspace during fire suppression activities.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-30	AM	Wild horse gathers or census work would not be affected by this airspace proposal as there are no restrictions preventing low-flying aircraft from operating under VFR in the proposed MOA.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-31	NO	Refer to Section 4.3.1 of the EIS to obtain the findings of the Noise analysis and Appendix G to see how the noise was calculated, to include sonic booms. Refer to response P-7. Turbulence via wind vortices would not occur. The F-16s using the White Elk MOA would not generate vortices of sufficient strength or duration to reach the ground since they would fly no lower than 3,100 feet AGL. No adverse impact to visual resources would occur. Refer to Section 4.5.1 in the EIS for the discussion on visual impacts. No ordnance would be released within the proposed airspace or associated ATCAA and no targets would be created on the ground; the natural features of the built environment would offer an abundance of simulated targets in order to ensure fulfillment of those training requirements. This Air Force proposal involves airspace use only with no direct ground impacts.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-32	BR	Studies have shown that livestock and wildlife birthing rates would not be impacted. While animals may exhibit the “startle effect” from sonic booms, observational studies indicate that animals tend to habituate with no long term adverse impacts (Workman <i>et al.</i> 1992). See response P-8.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-33	BR	No Threatened & Endangered (T&E) species or critical wildlife habitat are known to exist under the airspace; therefore no impacts would occur. Section 4.6.1 of the EIS provides the discussion on special-status species.

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0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-34	LU	As discussed in Section 4.5.1 of the EIS, the Wilderness Act and enabling legislation allow for military overflights and was not intended to keep sound originating from outside the area emanating into wilderness. In addition, the lands underlying the proposed White Elk MOA have been and continue to be subject to air traffic in existing military airspace and from civil and commercial aviation. Refer to response P-5.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-35	PA	No aspect of this Air Force proposal involves the placement or construction of equipment on the ground.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-36	AI	See response P-19. Section 4.10 of the EIS provides a discussion of areas of concern to American Indian Tribes with the findings indicating no impact to any resource area of concern.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-37	PA	As discussed in Section 2.1 of the EIS, the Air Force considered several alternatives for location of the new training airspace with the primary focus on lack of potential conflicts with airports, jet routes, and civil aviation around the UTTR airspace. Refer to response P-2.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-38	PA	As demonstrated in Section 2.1, of the EIS, the proposed airspace needs to be located within 150 nm of Hill AFB to maximize training time.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-39	PA	Refer to responses P-2 and A-37.
0012	Sheri Elklund Brown, Elko County Board of Commissioners	A-40	NE	The EIS provides a thorough analysis of all resource areas and addresses each of the concerns expressed by the Elko County Commission. In summary, the findings in the EIS indicate no significant or adverse impacts to any of the resource areas of concern.
0013	Larry Svoboda, United States Environmental Protection Agency	A-41	GE	Thank you for your comment.
0014	R. Tietje, Nevada State Clearinghouse	A-42	GE	Thank you for coordination with Division of State Lands and State Historic Preservation Office.
0014	Skip Canfield, Nevada Division of State Lands	A-43	GE	Thank you for your participation.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0014	Rebecca Palmer, State Historic Preservation Office	A-44	GE	Thank you for your comment.
0015	Zane Marshall, Southern Nevada Water Authority	A-45	AM	Thank you for your comment. VFR general aviation air traffic through the proposed White Elk MOA would remain unchanged. Refer to response P-11.
0015	Zane Marshall, Southern Nevada Water Authority	A-46	GE	The SNWA has been placed on the mailing list for the final EIS.
0016	Kenneth Cole, Western Watersheds Project	A-47	BR	A discussion of noise impacts to wildlife can be found in Section 4.6.1 of the EIS. The findings indicate sonic booms and frequency of occurrence (up to 10 sonic booms throughout the entire airspace during a flying day) would not present a significant impact to wildlife. Refer to response P-8. The pygmy rabbit currently petitioned for listing by the USFWS, would not be adversely impacted. Desert tortoises are not found in the affected region.
0017	David A. Pound, White Pine County Board of Commissioners	A-48	SO	Analysis of the effects on visitors to the region and glider activity, as presented in Sections 4.2 and 4.8, would be minor. See response A-50.
0017	David A. Pound, White Pine County Board of Commissioners	A-49	SO AM	Analysis of the effects on glider activity, as presented in Sections 4.2 and 4.8, would be minor. Also, the Air Force would mitigate potential impacts with gliders during major glider events. See response A-50.
0017	David A. Pound, White Pine County Board of Commissioners	A-50	AM	There is little evidence to indicate that this Air Force proposal will have a negative impact on glider activity in the region. As presented in EIS sections 4.2, <i>Aircraft Operations</i> and 4.4, <i>Safety</i> , there is no restriction against glider operations in a MOA. Hill AFB would mitigate potential impacts with no flight activity authorized during the peak glider season which occurs from July through August. It is incumbent that all users of the airspace be familiar with proposed usage by the Air Force; information is provided via NOTAM and by contacting Hill AFB Range Scheduling Office at 801-777-9386. Section 4.2.1 of the final EIS has been amended to include this contact phone number.
0017	David A. Pound, White Pine County Board of Commissioners	A-51	AM	Refer to response A-50.
0017	David A. Pound, White Pine County Board of Commissioners	A-52	AM	VFR general aviation air traffic in the proposed White Elk MOA would remain unchanged. Refer to responses P-11 and A-50.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0017	David A. Pound, White Pine County Board of Commissioners	A-53	AM	Life flights that transport time critical patients or donated organs receive priority status through any airspace unit when the pilot provides a call sign to the air traffic controller. FAA Order 7110.65 states that operational priority is given to civilian air ambulance flights when verbally requested. Language regarding this topic has been added to the final EIS in Section 4.4.1.
0017	David A. Pound, White Pine County Board of Commissioners	A-54	NE	The EIS provides a thorough analysis of all resource areas and addresses each of the concerns expressed by the Elko County Commission. In summary, the findings in the EIS indicate no significant or adverse impacts to any of the resource areas of concern.
0017	David A. Pound, White Pine County Board of Commissioners	A-55	AM SO	Refer to responses A-49 and A-50.
0018	George Lemich, Lemich Law Center	A-56	BR	Studies on noise impacts to mammals exposed to military aircraft noise and sonic booms find that mammals initially react with a startle effect but eventually habituate to the noise (Westman and Walters 1981; Harrington and Veitch 1991; Workman <i>et al.</i> 1992). Refer to Section 4.6.1 of the EIS for the discussion of this topic. See response P-8.
0018	George Lemich, Lemich Law Center	A-57	SO	As supported by Section 4.8.1 of the EIS, there is little to suggest that airspace modifications under the White Elk MOA proposal would impact land values in White Pine or Elko Counties. Refer to response P-1.
0018	George Lemich, Lemich Law Center	A-58	NO	Both low and high altitude civil and commercial air traffic currently occurs in the region proposed for the White Elk MOA and the noise from these activities currently generate noise levels less than DNL 45dB. Under the proposed action, subsonic noise levels would essentially remain unchanged. Noise from sonic booms is not expected to exceed CDNL 49 dB (or DNL 53 dB). Contours from supersonic noise levels are presented in Figure 4.3-1 of the EIS. See responses P-5 and P-7.
0018	George Lemich, Lemich Law Center	A-59	SO	Neither the increased flight training in the existing Currie/Tippet ATCAA or introduction of training activities under the proposed action is expected to increase or decrease the value of property under the airspace. See response P-1.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-60	LU	Both low and high altitude civil and commercial air traffic currently occurs in the region proposed for the White Elk MOA; however, as discussed in Section 4.3.1 of the EIS, subsonic noise levels would remain below baseline noise levels of DNL 45 dB. Noise from sonic booms would increase noise levels slightly; at the center of the ATCAA airspace, noise levels could reach approximately CDNL 49 dB (comparable to subsonic noise DNL of 53 dB). Section 4.5 addresses potential impacts to lands, including wilderness and recreation areas. None of the effects of the proposed action would significantly degrade the characteristics of these areas.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-61	LU	Subsonic noise under the affected airspace would not exceed DNL 45 dB. Wilderness Areas in Clark and Lincoln Counties have been established under MOAs with much greater noise levels than those expected for this proposal. Refer to response A-60.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-62	NE	The EIS provides a thorough analysis of the potential impacts to humans and wildlife under the proposed airspace. Refer to response P-8.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-63	AI	The Air Force contacted 37 American Indian tribes, colonies, and other organizations regarding this proposal. Section 4.10 of the EIS provides a discussion of areas of concern to American Indian tribes with the findings indicating no impact to any resource area of concern. The EIS provides a thorough analysis of sonic booms and identifies overpressures and their potential affect to structures. On page 4-10 in the draft EIS, the potential peak overpressures are described and it was established that the average peak overpressure would be less than 1 pound per square foot. This level would not be expected to damage most structures, including old or historic buildings. Appendix F included in the EIS also discusses sonic booms and overpressures. See response P-19.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-64	BR	While animals newly or infrequently exposed to aircraft noise exhibit the “startle effect” from sonic booms, observational studies indicate that animals tend to habituate with no long term adverse impacts (Workman <i>et al.</i> 1992). Refer to Section 4.6.1 of the EIS for the discussion on this topic. See also response P-8.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-65	NO	Interaction of sonic booms with caves has not been studied extensively. If a sonic boom were to impact the mouth of a cave, the energy of the boom is not expected to attenuate in the cave if it was transmitted into the cave. Thus, cave occupants would be exposed to the same level of boom as if they were outside the entrance of the cave. Not all booms would transmit into the cave due to impedance mismatches between the direction of boom propagation and the cave entrance orientation. The boom is not expected to be amplified in the cave since it is a transient noise and would not generate any lasting resonance.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-66	NE SA	Although some residue from the chaff and flare mechanisms would fall to the ground, it is not expected to accumulate. Rather, as described in Section 2.2.4 in the EIS, the chaff would be distributed over a very broad area under the MOA/ATCAA airspace (i.e. concentrations of 0.08 ounces per acre).
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-67	SA	The analysis in the EIS (Section 2.2.4) clearly demonstrates that the nature of the flares and the altitude to release would be many times greater than required for the flare to burn completely before touching the ground. See response P-18.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-68	NE	The EIS provides a thorough analysis of all resource areas and addresses each of the concerns expressed by the public and agencies during scoping. In summary, the findings in the EIS indicate no significant or adverse impacts to any of the resource areas of concern.
0019	Shaaron Netherton, Friends of Nevada Wilderness	A-69	GE	Thank you for your comment.
0020	Kenneth Cole, Western Watersheds Project	A-70	BR	Refer to response A-47 which addresses this same comment from a previously submitted letter.
0020	Kenneth Cole, Western Watersheds Project	A-71	BR	Livestock grazing and its impact to the lands are not within the purview of the Air Force, nor related to this airspace proposal.
0021	Jo Anne Garret, Baker Area Advisory Board	A-72	PA	The location of the proposed MOA is northwest of North Snake Range; this airspace proposal does not overlie portions of Snake Range. Refer to Appendix G; Table G-1 of the EIS for Universal Transverse Mercator coordinates of the MOA/ATCAA airspace.
0021	Jo Anne Garret, Baker Area Advisory Board	A-73	AM	Both low and high altitude civilian and commercial air traffic currently occurs in the region proposed for the new MOA. Under this airspace proposal, military aircraft would not fly below 14,000 feet MSL. Noise from sonic booms is not expected to exceed CDNL 49 dB (or DNL 53 dB). Refer to response P-5.
0022	Grace Thornton Potorti, Rural Alliance for Military Accountability RAMA	R-1	PN	The purpose and need for this airspace proposal can be found in Sections 1.3 and 1.4 of the EIS, respectively. Refer to response P-6.
0022	Grace Thornton Potorti, RAMA	R-2	PA	Section 2.1 of the EIS provides the Alternative Identification Process. Refer to response P-2.
0022	Grace Thornton Potorti, RAMA	R-3	NO	The following statement found in the EIS, Appendix F, Section 3.2 <i>Sonic Booms</i> provides the rationale for averaging sonic boom noise (i.e., CDNL): The Air Force's PCBoom4 computer program (Plotkin and Grandi 2002) can be used to compute the complete sonic boom footprint for a given single event, accounting for details of a particular maneuver. Supersonic operations for the proposed action and alternatives are, however, associated with air combat training, which cannot be described in the deterministic manner that PCBoom4 requires. Supersonic events occur as aircraft approach an engagement, break at the end, and maneuver for advantage during the engagement. Long time cumulative sonic boom exposure, CDNL, is meaningful for this kind of environment.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-4	PA	The proposed action is to create a military operations area (MOA). The supersonic operations proposed would occur in the existing overlying Currie/Tippet ATCAA at altitudes above 18,000 feet MSL. Figure 2-4 in the EIS provides the locations of authorized Supersonic Operating Areas (SOA) in the Utah Test and Training Range.
0022	Grace Thornton Potorti, RAMA	R-5	PA	This statement is incorrect. Cruise missile testing occurs only within authorized areas of the Utah Test and Training Range within restricted areas. The Gandy MOA/ATCAA airspace is not within an authorized cruise missile test area.
0022	Grace Thornton Potorti, RAMA	R-6	PA	See responses R-4 and R-5. No aspect of this airspace proposal includes cruise missile tests or testing.
0022	Grace Thornton Potorti, RAMA	R-7	PA	Relocating the 388 FW F-16s was not an alternative considered or eliminated for consideration under this proposal. In fact, during the Defense Base Realignment and Closure (BRAC) 2005, not only was the 388 FW not recommended to move from Hill AFB, but it was recommended that they increase their F-16 complement with six aircraft from Cannon AFB. Chapter 1 provides a complete description of the purpose and need while Chapter 2 defines the proposed action and alternatives considered.
0022	Grace Thornton Potorti, RAMA	R-8	CU	As presented in the Section 5.1.2 of the EIS, “the scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EIS, the area underlying the existing Currie/Tippet ATCAA defines the primary geographic extent of the cumulative effects analysis. In addition, the potential exists for indirect influence of the proposed action on components in Elko and White Pine Counties in northeastern Nevada. Past actions within the affected area relate predominantly to Air Force activities within the existing ATCAA. Examination of other actions not occurring within or adjacent to this affected area demonstrates that they lack the necessary interactions to produce cumulative effects.
0022	Grace Thornton Potorti, RAMA	R-9	PA SA	Training in the MOA/ATCAA airspace would not involve live ordnance. The training aircraft would be “dry”-- no bombs attached; however, the aircraft could have external fuel tanks and training missiles (non-flyable) attached on the wings. In the last 30 years the UTTR has had no inadvertent release of weapons outside of the restricted range.
0022	Grace Thornton Potorti, RAMA	R-10	PA	No electronic warfare sites or radar sites are proposed for this action. Currently, JTACs operate mobile electronic equipment under the Currie/Tippet ATCAA in Elko County and their use could be extended to White Pine County as a result of the proposed action. JTAC is briefly described in the footnote of Table 1-1.
0022	Grace Thornton Potorti, RAMA	R-11	PA	No lasers are proposed for use in the MOA/ATCAA airspace.

<i>Comment/ Letter #</i>	<i>Commentor</i>	<i>Response #</i>	<i>Response Code</i>	<i>Response</i>
0022	Grace Thornton Potorti, RAMA	R-12	NO	A combined total of 152 sortie-operations were recorded on the portions of MTRs IR-293 and VR-1259 (Section 2.3.2). Specific noise analysis was not included on the MTR since the noise levels of the proposed action would be less than DNL 45 dB and would not contribute to other cumulative noise sources.
0022	Grace Thornton Potorti, RAMA	R-13	AM	Air Refueling Route AR-659 already exists and refueling operations have been taking place on this route as indicated on page 2-20 and shown on Figure 2-4 of the draft EIS. Aircraft do not fly at supersonic speed during refueling operations; refueling aircraft (KC-135 and KC-10) are incapable of flying at supersonic speeds.
0022	Grace Thornton Potorti, RAMA	R-14	NO	Refueling operations on AR-659 were modeled in the noise analysis. Refer to Table G-4 of Appendix G, <i>Noise Calculations</i> . KC-135 and KC-10 are the refueling aircraft.
0022	Grace Thornton Potorti, RAMA	R-15	NO	The analysis considered the number of sorties operations for refueled aircraft. Table 2-7 provides day/night sortie operations and the duration of sorties relative to refueling events (refueled vs. unrefueled). These times were modeled in the noise analysis (refer to Appendix G, page G-8).
0022	Grace Thornton Potorti, RAMA	R-16	SA	Refueling booms are equipped with poppet valves to prevent leakage until the receiving jet hooks up to the refueler. The valve closes upon disengagement, little fuel is lost during the process and what little is lost generally evaporates before reaching the ground.
0022	Grace Thornton Potorti, RAMA	R-17	NO	CDNL is C-Weighted Day-Night Average Sound Level. The EIS provides the comparable DNL (Day-Night Average Sound Level) to present the reader with a relatable noise level.
0022	Grace Thornton Potorti, RAMA	R-18	GE	None of these quotes are from the EIS.
0022	Grace Thornton Potorti, RAMA	R-19	NO	The findings in the EIS noise analysis indicate 75 percent of the 296 estimated monthly sonic booms would be generated above 30,000 feet MSL (Appendix G). Not all of these booms would reach the ground. While peak overpressures for this type of sonic boom could range from less than 1 to 12 pounds per square foot (psf) in the center of the ATCAA airspace, average peak overpressure is under 1 psf with a small probability of booms achieving 6 to 7 psf. As such, people may be more annoyed with the sonic booms, but exposure to overpressures causing pain would not be expected. Refer to Section 4.3.1 and Appendix G of the EIS. Also, see response P-7.
0022	Grace Thornton Potorti, RAMA	R-20	PA NO	Refer to tables 4.3-4 and E-7 for the projected sonic boom frequency per aircraft sortie. See response P-22.

<i>Comment/ Letter #</i>	<i>Commentor</i>	<i>Response #</i>	<i>Response Code</i>	<i>Response</i>
0022	Grace Thornton Potorti, RAMA	R-21	LU NO	The surface area under the Currie/Tippet ATCAA is 1,689,062 acres. Appendix F, Section 3.2 clearly provides a good overview of sonic booms. A general rule of thumb for steady supersonic cruise is that the width of the boom carpet is 1 mile wide for every 1,000 ft of aircraft altitude. For example, an F-16 flying at a steady speed of 1.3Mach at 30,000 MSL would generate a boom footprint on the ground with a width of approximately 30 miles (statute). In this boom footprint the levels would be highest directly underneath the flight path and lowest at the carpet edge. In terms of estimating the “boomed” area, a conservative estimate would be to multiply the aircraft ground speed by the duration then by the boom width. For the example above the area would be approximately 1320 square miles, (766 knots x 3 minutes x 30 miles). This estimate is very conservative since the proposed operations will include acceleration and deceleration phases within the expected maximum supersonic segment duration of 3 minutes.
0022	Grace Thornton Potorti, RAMA	R-22	NO	The Air Force analysis does not indicate the potential for “carpet booms.” The following discussion on page 3-21 of the draft EIS provides the rationale. <i>The shape and sound of a sonic boom, resulting from supersonic flight, depends on an aircraft's size, weight, geometry, flight altitude, Mach number (i.e., speed), and maneuvering. When comparing the sonic boom from two aircraft, differences in booms are related to variations in size, weight, and geometry. Aircraft exceeding Mach 1 always create a sonic boom; however, not all supersonic flight activities will cause a boom at the ground. As altitude increases, air temperature decreases, and these layers of temperature change cause booms to be turned upward as they travel toward the ground. Depending on the altitude of the aircraft and the Mach number, many sonic booms are bent upward sufficiently that they never reach the ground. This same phenomenon, referred to as “cutoff,” also acts to limit the width (area covered) of the sonic booms that reach the ground.</i>
0022	Grace Thornton Potorti, RAMA	R-23	NO	Peak overpressure from sonic booms is discussed in Section 4.3.1 and Appendix G of the EIS. See response R-20.
0022	Grace Thornton Potorti, RAMA	R-24	BR	The EIS presents a thorough analysis of the potential impacts to persons and animals. Aircraft in the MOA airspace would not fly below 14,000 feet MSL and supersonic flight would only be authorized in the ATCAA airspace above 18,000 feet MSL. At this altitude, there is no evidence that the health of persons or animals would be impaired.
0022	Grace Thornton Potorti, RAMA	R-25	NO	Noise from sonic booms heard on the ground would not exceed CDNL 49 dB or comparable DNL of 53 dB. See response P-5.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-26	NO	The analysis uses Federal Interagency Committee on Noise (FICON), Defense Noise Working Group (DNWG) and American National Standards Institute (ANSI) recommended metrics for this environmental analysis. Also, the C-weighting used for the sonic boom analysis accounts for the higher levels and low frequencies contained in these impulsive signatures.
0022	Grace Thornton Potorti, RAMA	R-27	NO	The United States Environmental Protection Agency (USEPA) noise level DNL 55 dB has been used throughout the draft EIS. See pages 4-5, 4-29, and pages F-11 and F-15 in Appendix F.
0022	Grace Thornton Potorti, RAMA	R-28	NO	Table F-5 (Appendix F) provides possible damage to structures from sonic booms with greater than 10 psf.
0022	Grace Thornton Potorti, RAMA	R-29	NO	Aircraft operations involving supersonic flight would occur only above 18,000 feet MSL. The Air Force noise analysis modeled the flight activities of aircraft flying supersonic in the ATCAA airspace and based on the best available data, the predictive computer modeling did not indicate the potential for carpeted sonic booms or super booms. The predicted shape and noise levels (CDNL) of the sonic booms for this analysis are provided in Figures 4.3-1 and E-2.
0022	Grace Thornton Potorti, RAMA	R-30	NO	See responses R-22 and R-29.
0022	Grace Thornton Potorti, RAMA	R-31	NO	The analysis for subsonic noise levels included all military aircraft that the Air Force predicts would utilize the proposed MOA and overlying ATCAA airspace. Baseline and project subsonic noise levels for various points under the MOA/ATCAA airspace are provided in Table 4.3-2.
0022	Grace Thornton Potorti, RAMA	R-32	NO	No particular noise measurements for this analysis have been conducted, but the noise models utilized have been validated by many measurement and research studies sponsored by the Department of Defense and the National Aeronautics and Space Administration.
0022	Grace Thornton Potorti, RAMA	R-33	NO	Since 2005 when the White Elk ATCAA (Currie/Tippet) was established, Hill AFB has received no noise complaints in the areas underlying the airspace.
0022	Grace Thornton Potorti, RAMA	R-34	NO	The atmosphere does influence where a sonic boom intercepts the ground for an individual supersonic flight. However, when assessing cumulative supersonic events over a year, the atmospheric effect on sonic boom ground location is negligible compared to the distribution of supersonic flight segments. Terrain can act as a barrier for ground locations that are not directly underneath or near supersonic flight tracks. Thus, terrain may reduce the sonic boom levels in these areas. However, this reduction in the estimated sonic boom levels is not included in the model.
0022	Grace Thornton Potorti, RAMA	R-35	NO	See response R-34.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-36	NO	See response R-34.
0022	Grace Thornton Potorti, RAMA	R-37	NO	See response R-34.
0022	Grace Thornton Potorti, RAMA	R-38	NO	See response R-34.
0022	Grace Thornton Potorti, RAMA	R-39	NO	See response A-65.
0022	Grace Thornton Potorti, RAMA	R-40	BR	The conclusion was drawn from a review of health studies involving low-altitude military aircraft. Under this proposal, aircraft in the MOA would not fly below 14,000 feet MSL and supersonic flight would only be authorized in the ATCAA airspace above 18,000 feet MSL. There is no evidence that the physiological health of persons would be impaired by aircraft noise at these levels.
0022	Grace Thornton Potorti, RAMA	R-41	PA	The Air Force estimates 14 sonic booms per year would occur at night under this proposal.
0022	Grace Thornton Potorti, RAMA	R-42	NO	Refer to response P-23.
0022	Grace Thornton Potorti, RAMA	R-43	NO	Table F-5 in Appendix F of the EIS relates sonic boom overpressures with potential damages to structures of various types. This table includes the overlap of structural component natural frequencies and the frequencies of an impinging sonic boom.
0022	Grace Thornton Potorti, RAMA	R-44	NO	Refer to response P-23.
0022	Grace Thornton Potorti, RAMA	R-45	AM	This statement is inaccurate. It implies that UTTR supersonic airspace is contiguous, when it is confined to much smaller blocks in the north and south ranges. These are not connected to the proposed White Elk MOA. Refer to Figure 2-4 in the EIS.
0022	Grace Thornton Potorti, RAMA	R-46	PN	The proposed action is needed to provide reliable training airspace connected to the UTTR to support F-16 training requirements of the 388FW. The existing UTTR airspace does not provide this capacity due to limitations imposed by test and evaluation priorities. The purpose and need for this airspace proposal can be found in Sections 1.3 and 1.4 of the EIS, respectively.
0022	Grace Thornton Potorti, RAMA	R-47	PA	Movement of a fighter squadron is not within the scope of this analysis.
0022	Grace Thornton Potorti, RAMA	R-48	PN	The F-16 is capable of long-distance travel; however, for the purposes of meaningful training time, 150 nm is the threshold beyond which effective training is essentially lost (Air Force 1993).

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-49	PA	Use of simulators as an alternative was considered, but numerous factors render this alternative not viable. See Section 2.1.2 in the EIS.
0022	Grace Thornton Potorti, RAMA	R-50	PN	The Nevada Test and Training Range is beyond the 150 nm threshold for effective training. The supersonic training areas in Utah are within the Utah Test and Training Range; however, that airspace is not available as needed for 388 FW training as discussed in the purpose and need for this airspace proposal.
0022	Grace Thornton Potorti, RAMA	R-51	PA PN	See response P-35. While the airspace proposal overlies numerous communities and would have the potential to affect approximately 170 persons under the airspace, there is nothing in the EIS findings to indicate any significant adverse impacts would occur from the proposed training activities.
0022	Grace Thornton Potorti, RAMA	R-52	SO	See response P-1.
0022	Grace Thornton Potorti, RAMA	R-53	AM	Military missions differ greatly from the requirements for commercial flight. That is why military flight activities are segregated from the rest of the national airspace system.
0022	Grace Thornton Potorti, RAMA	R-54	NO	Ely, Nevada would likely experience subsonic noise less than DNL 45 dB and supersonic noise less than CDNL 42 dB (comparable to DNL 45 dB).
0022	Grace Thornton Potorti, RAMA	R-55	NO	Throughout the areas underlying the MOA/ATCAA airspace, a maximum CDNL 49 dB would be heard in the center of the airspace (comparable to DNL 53 dB) becoming smaller from the center based on the number and type of training missions proposed. Since most modern construction methods and materials commonly reduce interior noise levels by 20 dB, there would be no need for homes or businesses to require soundproofing.
0022	Grace Thornton Potorti, RAMA	R-56	NO	Structural vibration levels are used to associate potential damage levels of sonic booms. Table F-5, “ <i>Possible Damage to Structures From Sonic Booms</i> ,” in Appendix F of the EIS provides a good summary of potential damage for a range of sonic boom levels.
0022	Grace Thornton Potorti, RAMA	R-57	GE	Thank you for your comment.
0022	Grace Thornton Potorti, RAMA	R-58	NE	The Air Force analyzed all reasonable alternatives and as such met the CEQ guidelines for implementing NEPA. Refer to Section 2.1, <i>Alternative Identification Process</i> in the EIS.
0022	Grace Thornton Potorti, RAMA	R-59	PA NE	Movement of a fighter squadron is not within the scope of this analysis.
0022	Grace Thornton Potorti, RAMA	R-60	PN	See response P-20.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-61	PN	The explanation for closure of the UTTR range for cruise missile tests is provided in Section 1.2.4, <i>Limitations on Availability of UTTR</i> . On the rare occasion of a cancelled cruise missile test, the range becomes available to other users. However, the tests normally preclude other test and training activities. The 388 FW, as the entity responsible for long-term range scheduling, never schedules F-16 activity within the window reserved for a cruise missile test.
0022	Grace Thornton Potorti, RAMA	R-62	AM	Transient aircraft would likely come from Mountain Home AFB, Idaho and Nellis Air Force Base, Nevada. Transient aircraft would account for approximately 14 sonic booms per month under this proposal. See Table 4.3-4 in the EIS.
0022	Grace Thornton Potorti, RAMA	R-63	PA	NATO aircraft have not been considered under this proposal.
0022	Grace Thornton Potorti, RAMA	R-64	LU NO	See response R-21.
0022	Grace Thornton Potorti, RAMA	R-65	PA NO	The discussion on the number of sonic booms per training mission can be found in Chapter 4. See response R-20.
0022	Grace Thornton Potorti, RAMA	R-66	NO	Based on the expected training tempo of the 388 FW, supersonic activity would result in up to approximately 10 sonic booms a day.
0022	Grace Thornton Potorti, RAMA	R-67	PA	The Air Force is requesting the use of authorized RR-188 chaff and M-206 flares in the MOA/ATCAA airspace. No munitions or ordnance beyond chaff and flares would be utilized.
0022	Grace Thornton Potorti, RAMA	R-68	PA	Supersonic operations would be authorized only in the ATCAA airspace (above 18,000 feet MSL). See response P-22.
0022	Grace Thornton Potorti, RAMA	R-69	SA	All supersonic training would occur in the ATCAA above 18,000 feet MSL. ATCAAs exist only when made available for military use by the FAA and can be authorized only above 18,000 feet MSL. By definition, ATCAAs can be activated only when not needed for other purposes. Civilian and commercial traffic is separated from military operations in an active ATCAA. Under these rules, there would be negligible risk to non-military pilots transiting the Currie/Tippet ATCAA.
0022	Grace Thornton Potorti, RAMA	R-70	AM SO	As provided in Section 2.1.1, Criterion 4, nonparticipating civil and military aircraft flying under visual flight rules (VFR) may transit an active MOA by employing see-and-avoid procedures. When operating under instrument flight rules (IFR), nonparticipating aircraft will not be cleared to fly into an active MOA. Air traffic control may permit IFR traffic to cancel IFR and fly VFR through the MOA. Thus, while establishing a MOA could affect civil aviation traffic when active, it would not prohibit such traffic or limit it substantially. Civilian/commercial IFR traffic is separated from military operations in an active ATCAA.

<i>Comment/ Letter #</i>	<i>Commentor</i>	<i>Response #</i>	<i>Response Code</i>	<i>Response</i>
0022	Grace Thornton Potorti, RAMA	R-71	SA	Nonparticipating civil and military aircraft flying under VFR may transit an active MOA by employing see-and-avoid procedures. When operating under IFR, nonparticipating aircraft may be permitted by air traffic control to cancel IFR and fly VFR through an active MOA. As described above in R-69, civilian/commercial IFR traffic is separated from military operations in an active ATCAA. Chaff and flares would be utilized in the MOA/ATCAA airspace; however, civil aviation traffic would not be prohibited or limited substantially when adhering to the FAA flight rules.
0022	Grace Thornton Potorti, RAMA	R-72	PA	See response R-4.
0022	Grace Thornton Potorti, RAMA	R-73	SA AM	See responses R-69 and R-71.
0022	Grace Thornton Potorti, RAMA	R-74	SA	Table D-1 in Appendix D provides the components of chaff while the components of flares are provided in Table E-1 in Appendix E of the EIS. The components of the chaff and flares proposed for use do not contain components that would pose harmful affects to persons, plants, or wildlife.
0022	Grace Thornton Potorti, RAMA	R-75	SA	Under this airspace proposal, the Air Force would adhere to AFI 13-214 (22 Dec 05) which prescribes a minimum flare release altitude of 2,000 feet AGL over non-government-owned or controlled areas. This minimum altitude is designed to prevent flare-caused fires. While there is no minimum release altitude for release of chaff, none would be released below 14,000 feet MSL under this proposal.
0022	Grace Thornton Potorti, RAMA	R-76	SA	See response P-18. The White Elk MOA floor would extend at least 3,100 feet AGL at any location; the potential for burning material striking the ground would be extremely low. As presented on page 4-12 in the draft EIS, the land area under the proposed White Elk MOA airspace would be covered under the fire management mutual aid agreements and BLM RMPs and Fire Management Plans listed in Section 3.5.1. The Air Force would inform the appropriate agencies (refer to page 3-23 of the draft EIS for the list of agencies with which the Air Force has mutual fire aid agreements) for response to flare-related fires. Implementation of the fire management plans and practices would greatly reduce the extent of fire from flares; therefore, no significant impacts would be expected from implementation of the proposed action.
0022	Grace Thornton Potorti, RAMA	R-77	SA	See response R-74 for location of constituents of chaff that would be authorized for use under this proposal.
0022	Grace Thornton Potorti, RAMA	R-78	SA	The individual end cap of a chaff cartridge weighs approximately 0.042 ounces. Previous analyses indicate that if a person on the ground was hit by an ejected end cap, the impulse impact would be 0.003 pound-seconds; the impulse impact required to cause brain injury is 0.10 pound-seconds (Air Force 1997). The potential for death from such an impact would be infinitesimal.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-79	SA	The potential for dud flares is extremely small (see page 4-13 and 4-14 in the draft EIS). With a dud rate on the ground of approximately .01percent, and a population of less than one person per square mile, the possibility of such an accident is so remote that it is very near zero.
0022	Grace Thornton Potorti, RAMA	R-80	AM	The Air Force would conduct training missions in the MOA/ATCAA airspace throughout each calendar year. As presented in the draft EIS (page 4-26), the Air Force would mitigate flight activity in the MOA/ATCAA during extensive glider activities.
0022	Grace Thornton Potorti, RAMA	R-81	NE	See response A-17 for explanation of procedures for damages.
0022	Grace Thornton Potorti, RAMA	R-82	SA	See response R-79.
0022	Grace Thornton Potorti, RAMA	R-83	SA	See response P-18. The potential for flares to start fires would be negligible and as provided in previous response (R-76) mutual aid agreements provide fire response to reduce the spread of fires. As noted in the draft EIS (page 3-22) fire suppression of wildland fires on federal lands is the responsibility of the BLM and is geared toward protecting lives, not the suppression of wildfire. During periods of high fire potential, flares are restricted or prohibited.
0022	Grace Thornton Potorti, RAMA	R-84	BR	Potential impacts to air quality were discussed on pages 3-3 and 3-4 of the draft EIS.
0022	Grace Thornton Potorti, RAMA	R-85	BR	The discussion of potential impacts to soil and water resources from chaff and flares use was presented on pages 3-4 and 3-5 of the draft EIS.
0022	Grace Thornton Potorti, RAMA	R-86	BR	The potential impacts to biological resources from chaff and flare use was discussed in Section 4.6 of the EIS.
0022	Grace Thornton Potorti, RAMA	R-87	BR	Cattle and cattle grazing, while not given special focus, are covered under the broad discussion of biological resources as found in Section 4.6 of the EIS.
0022	Grace Thornton Potorti, RAMA	R-88	SO	Mining and mining operations would not be impacted by this proposal.
0022	Grace Thornton Potorti, RAMA	R-89	SA	Chaff and flares are currently used in military airspace over numerous designated wilderness areas throughout the United States. The altitude of use combined with the widespread area would make the evidence of chaff and flares nearly unnoticeable on the ground. See also response P-18.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-90	SA	While fires caused by flares are rare, Hill AFB has fire suppression mutual aid agreements to provide fire response to reduce the spread of fires and protect lives. A fire caused by flares would have identical impacts to personnel safety, soil, water resources, biological resources, land use, visual resources and cultural resources as any other cause of a fire. The likelihood of a fire caused by flares would be remote. The Air Force implements procedures to limit flare use during periods of high fire potential. See Section 4.4.1 in the EIS for additional information about fire avoidance.
0022	Grace Thornton Potorti, RAMA	R-91	SA	The discussion on the potential for dud flares is found on pages 4-13 and 4-14 of the draft EIS. The potential for dud flares is extremely small and the potential for a dud flare to injure a person on the ground is even more remote.
0022	Grace Thornton Potorti, RAMA	R-92	SA	See response R-91.
0022	Grace Thornton Potorti, RAMA	R-93	SA	The Air Force would use RR-188 chaff and M-206 flares in the MOA/ATCAA airspace; both are authorized for use over both DoD and non-DoD land. Existing operating restrictions for use over non-DoD land are much greater than over DoD land.
0022	Grace Thornton Potorti, RAMA	R-94	SA NE	The analysis for the EIS focuses on those areas potentially affected by the Air Force proposal – areas of White Pine and Elko counties. Flares are currently not authorized for release in the Currie/Tippet ATCAA. Flares would not be released under 14,000 feet MSL (i.e., 3,100 to 8,500 feet AGL or higher) under this proposal. While there have been fires from flare usage, the potential for flares fires to occur due to the altitude restrictions is negligible.
0022	Grace Thornton Potorti, RAMA	R-95	SA	While modeling for fire risk was not implemented for this proposal, conclusions drawn from a review of information obtained on ranges and airspace areas where flares are currently employed by ACC units as presented in the <i>Technical Reports on Chaff and Flares, Technical Report No. 6, Flare Fire Risk Assessment, January 1995, Updated 1998</i> and guidance on use of chaff and flares as directed by ACC indicate the risk for fires from flares remains extremely small. Given the potential damage that uncontrolled fires can cause to property and sensitive environmental resources, adherence to ACC directives for use of flares would be followed. The Air Force would suspend use of flares during high fire risk. In addition, the Air Force would maintain the existing fire suppression mutual aid agreements as provided in Section 3.4 of the EIS.
0022	Grace Thornton Potorti, RAMA	R-96	BR	The components of the M-796 impulse cartridge used with the M-206 flares are provided in Table E-3 found in Appendix E of the EIS. None of the components of the M-796 contain chromium or lead.
0022	Grace Thornton Potorti, RAMA	R-97	BR	See response R-96.

<i>Comment/ Letter #</i>	<i>Commentor</i>	<i>Response #</i>	<i>Response Code</i>	<i>Response</i>
0022	Grace Thornton Potorti, RAMA	R-98	BR	No components of the RR-188 chaff or M-206 flares proposed for use in the MOA/ATCAA airspace pose a threat to human health or the environment to include air quality and water resources.
0022	Grace Thornton Potorti, RAMA	R-99	NE	The Air Force conducted field studies during the development of the 1997 Chaff and Flare Report. These studies indicated that small flare debris components (e.g., endcaps) have low visibility in natural settings. In general, flare debris, such as small endcaps, are not easily detected and would not affect overall scenic quality or outdoor experiences. As indicated in the report, flare debris does not appear to accumulate in quantities that would result in significant visual impacts. This report is available on the world wide web at www.acplanning.org .
0022	Grace Thornton Potorti, RAMA	R-100	NE	Residual materials resulting from chaff and flare use have not been discarded; rather, these residues are the byproducts of using countermeasures for their intended purpose during military training activities.
0022	Grace Thornton Potorti, RAMA	R-101	AI	Section 4.10 of the EIS provides a discussion of concerns to American Indians to include flare use and the potential for flare fires.
0022	Grace Thornton Potorti, RAMA	R-102	BR	Refer to response R-95 and <i>Technical Reports on Chaff and Flares, Technical Report No. 6, Flare Fire Risk Assessment, January 1995, Updated 1998</i> . This report is available on the world wide web at www.acplanning.org .
0022	Grace Thornton Potorti, RAMA	R-103	SA	See response R-94.
0022	Grace Thornton Potorti, RAMA	R-104	SA	The best available data for the potential risks from RR-188 chaff have been provided in the EIS. Refer to response R-102.
0022	Grace Thornton Potorti, RAMA	R-105	BR	Health risk assessments have concluded that the potential for chaff to break down into respirable particle sizes does not pose a significant concern. Once on the ground, chaff fibers would tend to break up when agitated by wind or water or when crushed by the movements of humans, animals, or machinery. Any activity that would stir up dust could potentially resuspend the shorter chaff particles, rendering them available for inhalation. Due to the diameter and length of the filaments, chaff would not penetrate far into the respiratory system and would be easily cleared out (<i>Environmental Effects of Self Protection Chaff and Flares, Final Report, August 1997</i>). Relative to the background concentrations of dust in the air, the amount of additional particles contributed by chaff fibers would be negligible, and no adverse effects would be expected from inhalation of the fibers by humans or wildlife.
0022	Grace Thornton Potorti, RAMA	R-106	BR	Studies conducted (Air Force 1997) indicate the weathering of aluminum coating on glass fiber chaff in the dry, alkaline environment such as that found in eastern Nevada would be slow.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-107	BR	Based on reviews of numerous toxicological studies, the principal components of chaff (aluminum, silica glass fibers, and stearic acid) will not pose an adverse impact to human and environmental health. They are unlikely to have significant effects on humans and the environment, based upon the general toxicity of the components, the dispersion patterns, and the unlikelihood of the components to interact with other substances in nature to produce synergistic toxic effects.
0022	Grace Thornton Potorti, RAMA	R-108	BR	Literature on the effects of chaff on water quality and aquatic habitats is limited. Reports compiled for Strategic Air Command and the Air National Guard (SBA 1989 and 1990) concluded that chaff, including its coating materials, is insoluble in water and, if it settled on a water body, it would either sink to the bottom or be driven across the surface by wind and deposited along the shoreline. No information was found documenting ingestion of chaff by avian species or aquatic organisms in the wild.
0022	Grace Thornton Potorti, RAMA	R-109	BR	See response R-105.
0022	Grace Thornton Potorti, RAMA	R-110	NE	There are no studies or literature to indicate that jet exhaust has an impact on chaff.
0022	Grace Thornton Potorti, RAMA	R-111	BR	The potential for chaff to affect soil and water is remote. Levels of use and accumulation would have to be extremely high to generate any significant adverse effects. Adverse effects to sensitive aquatic organisms, although unlikely, may be possible in certain small, confined water bodies. As presented on page 3-4 of the draft EIS, based on the quantity of chaff bundles proposed for deployment in the MOA/ATCAA, the distribution of chaff across the surface area under the Currie/Tippet ATCAA, which is 1,689,062 acres, would be approximately 2.29 grams per acre per year.
0022	Grace Thornton Potorti, RAMA	R-112	BR	Bioassays were not conducted for the proposed action since no significant accumulation of chaff fibers on water bodies would be expected and the potential for a dud flare to land in a small, confined water body is extremely remote.
0022	Grace Thornton Potorti, RAMA	R-113	BR	See response R-108.
0022	Grace Thornton Potorti, RAMA	R-114	BR	See response R-105.
0022	Grace Thornton Potorti, RAMA	R-115	BR	Given the properties of chaff fibers, skin irritation is not expected to be a problem (<i>Environmental Effects of Self Protection Chaff and Flares, Final Report, August 1997</i>).
0022	Grace Thornton Potorti, RAMA	R-116	NE	Studies conducted by the Air Force are presented in the <i>Environmental Effects of Self-Protection Chaff and Flares, Final Report, August 1997</i> . This report is available on the world wide web at www.acplanning.org .
0022	Grace Thornton Potorti, RAMA	R-117	NE	Refer to response R-99.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-118	CR	While little is known about the potential for chemical effects from chaff on archaeological or architectural resources, they are considered to be remote, since chaff is composed of common, non-destructive materials.
0022	Grace Thornton Potorti, RAMA	R-119	BR	Refer to Appendix D of the EIS for the components of RR-188 chaff. The chaff components (silica, aluminum, and stearic acid) are generally prevalent in the environment.
0022	Grace Thornton Potorti, RAMA	R-120	BR	As presented on page 3-4 of the draft EIS, based on the quantity of chaff bundles proposed for deployment in the MOA/ATCAA, the distribution of chaff across the surface area under the Currie/Tippet ATCAA, which is 1,689,062 acres, would be approximately 2.29 grams per acre per year. The potential for adverse health effects would require extremely large quantities of the materials to be ingested or inhaled for which that possibility is nearly improbable given the small amount expected to be distributed over such a large surface area.
0022	Grace Thornton Potorti, RAMA	R-121	BR	Chaff fibers are similar to very fine strands of hair; the strands are not spherical in shape.
0022	Grace Thornton Potorti, RAMA	R-122	BR	The chaff components (silica, aluminum, and stearic acid) are generally prevalent in the environment. The dispersal and decomposition of chaff fibers on land would limit the exposure of grazing animals to chaff, making it unlikely that ingestion of quantities large enough to have adverse physiological effects would occur. See response R-120.
0022	Grace Thornton Potorti, RAMA	R-123	BR	See responses R-105 and R-115.
0022	Grace Thornton Potorti, RAMA	R-124	BR	Approximately 203,500,000,000 strands of chaff would be dispersed each year across the surface area under the Currie/Tippet ATCAA which measures 1,689,062 acres.
0022	Grace Thornton Potorti, RAMA	R-125	BR	Both chaff types have a slip coating to prevent end welding of fibers when cut and to minimize clumping when ejected; however, chaff has been found in clumps on the ground surface. While it is not possible to provide a realistic probability for such an occurrence, it should be noted that chaff on dry land would tend to be blown around and disintegrate due to abrasion from surface features.
0022	Grace Thornton Potorti, RAMA	R-126	PA	Hill AFB aircraft would not increase their allotted flying hour budget; therefore, emissions from F-16 aircraft would not be expected to increase. The 388 FW would gain valuable training utilizing their flying hour budget.
0022	Grace Thornton Potorti, RAMA	R-127	BR	See response R-126. Emissions generated from F-16 and transient aircraft currently flying in the region or those proposed would not be expected to change the air quality in the region or contribute air pollutants that would require regional monitoring.
0022	Grace Thornton Potorti, RAMA	R-128	BR	See response R-126. F-16 and transient aircraft would not jettison jet fuel under normal operating procedures; therefore there is little chance that persons under the airspace would be exposed to jet fuel.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-129	GE	Contrails may be produced by military aircraft; however, this will not impact the visual environment.
0022	Grace Thornton Potorti, RAMA	R-130	SA	Page 3-30 of the draft EIS provides various scenarios that could occur to the hydrazine canister should an F-16 crash. The likelihood of untrained emergency personnel coming in contact with liquid hydrazine is remote. Hydrazine is highly toxic and death is possible.
0022	Grace Thornton Potorti, RAMA	R-131	SA	The aircraft are routinely maintained and thoroughly inspected regularly. Aircraft that do not meet safety standards are not allowed to fly.
0022	Grace Thornton Potorti, RAMA	R-132	GE	That decision can only be provided by the Department of Defense.
0022	Grace Thornton Potorti, RAMA	R-133	PA	Cruise missile testing occurs only within authorized areas of the Utah Test and Training Range within restricted areas. Cruise missile tests or testing would not occur in the MOA/ATCAA.
0022	Grace Thornton Potorti, RAMA	R-134	SA	The statistical probability of an F-16 crash in White Pine and Elko Counties is very small. Given that the proposed altitude is above 14,000 feet MSL and the remote nature and low populations of people under the proposed training airspace, the potential for catastrophic loss of life or property would be considered improbable.
0022	Grace Thornton Potorti, RAMA	R-135	SA	The potential for a flare initiated fire is very small; therefore the potential impact to the local economy from such an incident would remain small.
0022	Grace Thornton Potorti, RAMA	R-136	SO	See response P-1.
0022	Grace Thornton Potorti, RAMA	R-137	PN	As stated in Sections 1.3. and 1.4, the purpose of this proposed action is to provide reliable training airspace connected to the UTTR to support F-16 training requirements of the 388 Fighter Wing that the existing UTTR airspace cannot provide due to limitations imposed by test and evaluation priorities. See response P-20.
0022	Grace Thornton Potorti, RAMA	R-138	PA	See response R-133.
0022	Grace Thornton Potorti, RAMA	R-139	NE	The Air Force is conducting an environmental analysis for the purpose of providing reliable training airspace to the 388 FW F-16 pilots. No other actions are or will be added to this proposal. However, if in the future, the Air Force proposes to modify the activities analyzed under this EIS, any required analysis would be conducted.
0022	Grace Thornton Potorti, RAMA	R-140	NE	Actions mentioned are not within the scope of this analysis and have not been included within this EIS.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-141	AM	There are no noise avoidance areas currently identified under the proposed MOA or overlying Currie/Tippet ATCAA. Should such areas be identified in the future, military pilots would be instructed to avoid those locations by horizontal and vertical distances to enhance flight safety, noise abatement, and environmental sensitivity.
0022	Grace Thornton Potorti, RAMA	R-142	BR	The BASH Team at the Air Force Safety Center has developed a Bird Avoidance Model. This model predicts relative risk of wildlife strikes during selected time-frames in specific geographic areas. The Air Force understands that peak migration periods for raptors, such as the vulture, are from October to mid-December and from mid-January to the beginning of March. While aircraft may encounter birds at altitudes of 30,000 feet above MSL or higher, over 95 percent of reported bird strikes occur below 3,000 feet AGL. In general, flights above 1,500 feet AGL would be above most migrating and wintering raptors. During the years from March 1985 to January 2008, Hill AFB documented 9 bird strikes. The number of bird strikes would be expected to remain small since 85 percent of training missions would occur in the ATCAA airspace (18,000 to 58,000 feet MSL). Any BASH incidents with migratory birds would constitute "unintentional or incidental taking" under the classification of "military readiness activity."
0022	Grace Thornton Potorti, RAMA	R-143	CR	<p>A representative from the Carson City District BLM Office was contacted regarding any documentation to damage from Fallon NAS overflight activities at Grimes Point Petroglyph Park, and they were unaware of any report. No information was found on the 1990 Sutherland et al. study cited in the comment.</p> <p>However, a study of four petroglyph/pictograph sites was done in 1999 on Nellis Air Force Range (now the Nevada Test and Training Range) and adjacent overflight lands (including BLM land), with a focus on determining aircraft sonic boom effects on rock formations containing petroglyphs/pictographs. The results at these four sites indicated that all instances of any degradation of the rock panels were consistent with natural weathering and chemical alterations, not the result of sonic booms (White and Orndoff 1999). Another study evaluating sites at Nellis Air Force Range and nearby BLM lands showed a definite trend toward sites on the range having less disturbance and being in better condition than those on BLM land (Gross et al., 2001). This is more likely due to the access restrictions on the range lands, providing added site preservation.</p> <p>Additionally, while some prehistoric archaeological sites could contain natural structures such as rock shelters or caves that house petroglyphs or pictographs, studies have found that these types of natural formations are not affected any more by noise vibrations, such as sonic booms, than by natural erosion, wind, or seismic activity (Battis 1983).</p>

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-144	BR	Peregrine falcons have been documented in the region. The following can be found on page 4-20 of the draft EIS, “In raptors, Ellis <i>et al.</i> (1991) found that peregrine and prairie falcons’ responses to simulated sonic booms were often minimal and never associated with reproductive failure. Typically, birds quickly resumed normal activities within a few seconds following a sonic boom. While the falcons were noticeably alarmed by the sonic booms, the negative responses were brief and not detrimental to reproductive success during the course of the study.
0022	Grace Thornton Potorti, RAMA	R-145	BR	Aircraft under this proposal would not fly below 14,000 feet MSL (or between 3,100 and 8,500 feet AGL) – these are not low-altitude flight levels. Studies on supersonic noise impacts to mammals exposed to military aircraft noise and sonic booms find that mammals initially react with a startle effect but eventually habituate to the noise (Westman and Walters 1981; Harrington and Veitch 1991; Workman <i>et al.</i> 1992). Refer to Section 4.6.1 of the EIS for the discussion of this topic.
0022	Grace Thornton Potorti, RAMA	R-146	BR	While no wetlands or jurisdictional waters of the United States have been identified in the affected region, the potential to impact such waters through use of chaff and flares would be negligible. Components of the RR-188 chaff and M-206 flares, proposed for use in the MOA/ATCAA airspace, are not expected to pose a threat to human health or the environment, including water resources. As such, streams, creeks, ponds, and reservoirs (such as Bassett Lake) used by recreationalists and fishermen would not be adversely impacted by this proposal.
0022	Grace Thornton Potorti, RAMA	R-147	BR	The components of RR-188 chaff and M-206 flares proposed for use in the MOA/ATCAA airspace do not pose a threat to human health or the environment to include water resources. As such, streams, creeks, and ponds used by recreationalists and fishermen would not be adversely impacted by this proposal.
0022	Grace Thornton Potorti, RAMA	R-148	SA	The floor of the MOA would be well above any future wind-energy projects. The Air Force is aware of proposed wind farms in the Egan Range (refer to Figure 3.5-1 in the EIS). The military aircraft using the White Elk MOA would not generate vortices of sufficient strength or duration to reach the ground since they would fly no lower than 3,100 feet AGL; therefore, wind energy workers would not be affected. The Air Force estimates about 10 booms per flying day throughout the entire airspace; about 0.4 booms per day would reach the ground and could be heard. There is little potential that a worker involved in wind farm construction or maintenance would be hurt should a sonic boom reach the ground in the vicinity of the wind farm.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-149	SO	Military aircraft using the White Elk MOA would not fly below 3,100 feet AGL, a height much greater than that proposed for future wind farms. As such, there is little chance that future wind farms in the region would impact military flight training operations. Opposition to wind farms in the Nevada Test and Training Range is due to the testing activities rather than Nellis AFB pilot training activities.
0022	Grace Thornton Potorti, RAMA	R-150	SO	All production activities located under the proposed MOA and overlying Currie/Tippet ATCAA, to include alfalfa hay production, would not be impacted by military flight operations in the airspace.
0022	Grace Thornton Potorti, RAMA	R-151	BR	Although some residue from the chaff would fall to the ground, it would not accumulate. Rather, as described in the draft EIS (pages 2-24 to 2-25); the chaff would be distributed over a very broad area under the MOA/ATCAA airspace (i.e. concentrations of 0.08 ounces per acre). Well established studies demonstrate that these hair-like strands of chaff are not readily visible and pose no inhalation risk to persons or animals. Refer to response R-107. There is nothing to suggest that use of chaff could result in any adverse economic impact to recreational or property values; therefore there is little justification for more detailed analysis on this subject.
0022	Grace Thornton Potorti, RAMA	R-152	NO	All of the areas mentioned which underlie the proposed White Elk MOA and Currie/Tippet ATCAA, including McGill Elementary were analyzed for subsonic and supersonic noise. All were demonstrated to not be subjected to noise levels above 49 CDNL (approximately DNL 53 dB). McGill Elementary is located on the southernmost tip of the MOA/ATCAA airspace where it would be subject to far less than 0.4 booms per day as could occur at the center of the airspace. Callao, Trout Creek, and Partoon do not underlie the area of the proposed action.
0022	Grace Thornton Potorti, RAMA	R-153	EJ	The discussion on Environmental Justice and Protection of Children is located in Sections 3.9 and 4.9 of the EIS. The type of military training missions proposed for the MOA/ATCAA airspace are representative of the non-hazardous military mission training currently conducted in the UTTR.
0022	Grace Thornton Potorti, RAMA	R-154	NO	See response R-152 regarding noise levels at McGill Elementary School.
0022	Grace Thornton Potorti, RAMA	R-155	BR	Refer to response R-145.
0022	Grace Thornton Potorti, RAMA	R-156	BR	Refer to response R-145.
0022	Grace Thornton Potorti, RAMA	R-157	BR	Refer to response R-145.
0022	Grace Thornton Potorti, RAMA	R-158	BR	Refer to response R-145.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-159	BR	Refer to response R-145.
0022	Grace Thornton Potorti, RAMA	R-160	BR	Refer to response R-145. Studies indicate that birds quickly resume normal activities within a few seconds following a sonic boom. Some species groups have been studied only rarely (e.g., reptiles and amphibians, neotropical migrant songbirds). McClenaghan and Bowles (1995) emphasized the research difficulty in distinguishing potential long-term effects on free ranging wild populations due to aircraft noise compared to other environmental factors.
0022	Grace Thornton Potorti, RAMA	R-161	BR	Limited research has been done with reptiles in response to aircraft noise and sonic booms. A study of the desert tortoise (<i>Gopherus agassizii</i>) newly exposed to simulated subsonic aircraft noise, reported that the tortoise initially adopted a defensive response by “freezing” their activity for up to 113 minutes (Bowles <i>et al.</i> 1999). During subsequent exposure, the response was a milder defensive state for less than five minutes. Response to sonic booms was limited to brief periods of adopting an alert or watchful behavior. Refer to Section 4.6.1 of the EIS for this discussion.
0022	Grace Thornton Potorti, RAMA	R-162	BR	In raptors, Ellis <i>et al.</i> (1991) found that peregrine and prairie falcons’ responses to simulated sonic booms were often minimal and never associated with reproductive failure. Typically, birds quickly resumed normal activities within a few seconds following a sonic boom. While the falcons were noticeably alarmed by the sonic booms, the negative responses were brief and not detrimental to reproductive success during the course of the study. Refer to Section 4.6.1 of the EIS for this discussion.
0022	Grace Thornton Potorti, RAMA	R-163	BR	Refer to responses R-145 and R-162.
0022	Grace Thornton Potorti, RAMA	R-164	BR	Several studies on the effects of noise on poultry were reviewed in <i>The Impact of Low Altitude Flights on Livestock and Poultry</i> (Department of the Air Force 1993). The report found that the major impact concern for poultry from low altitude flying arises from pileups in turkey flocks (i.e., where turkeys pile together in a concentrated area often resulting in death from suffocation or overheating); pileups of chickens were not reported. The report also concluded that low-altitude flights result in no effects on chicken growth and reproduction functions (e.g., egg laying). This airspace proposal does not include low-altitude flight training. With variations in terrain, the lowest altitude would be approximately 3,100 feet AGL.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-165	BR	The startle reflex is the most commonly documented effect on domesticated animals such as cow, sheep and lambs, horses and ponies. Results of the startle reflex are typically minor (e.g., increase in heart rate and nervousness) and do not result in injury. Exceptions may occur when animals are crowded in small enclosures such as corrals or feedlots, where loud, sudden noise may cause a widespread panic reaction. However, such negative impacts were only observed from aircraft at less than 330 feet AGL (USFS 1992). This airspace proposal does not include low-altitude flight training. With variations in terrain, the lowest altitude would be approximately 3,100 feet AGL.
0022	Grace Thornton Potorti, RAMA	R-166	BR	In, <i>The Impact of Low Altitude Flights on Livestock and Poultry</i> (Department of the Air Force 1993), three sources reviewed conclude that pregnant cattle are unaffected by overhead aircraft flights and two sources conclude that pregnant cattle are affected by overhead aircraft.
0022	Grace Thornton Potorti, RAMA	R-167	BR	No controlled studies of the responses of mounted horses to aircraft noise are available. Anecdotal reports indicate that horses with riders startle when surprised by low-altitude overflights, but responses varied with the horse, rider, terrain, and other conditions. Several anecdotes noted that horses gallop or bite or kick in response to low-altitude overflights (Manci <i>et al.</i> 1988); however, no documented injuries to horses or riders were reported, and there was evidence that horses adapted to aircraft noise. This airspace proposal does not include low-altitude flight training. With variations in terrain, the lowest altitude would be approximately 3,100 feet AGL.
0022	Grace Thornton Potorti, RAMA	R-168	AI CR	During scoping, there was a concern that the noise and visual intrusions of aircraft overflights might interrupt religious ceremonies. Although all scoping meetings were open to the public, one meeting in West Wendover was held specifically to discuss any American Indian concerns. Three members of the Goshute Indian Reservation attended and expressed concerns about safety (aircraft crashes), noise, and overflight effects on the local economy. No comments on the findings in the EIS were received from the Goshute Tribe. Consultation with American Indian groups did not reveal any information about traditional cultural resources under the affected airspace (see Section 3.10 of the EIS). Although traditional cultural resources have not been identified, at least one area under the proposed airspace is used for religious rituals.
0022	Grace Thornton Potorti, RAMA	R-169	CR	See response R-143.
0022	Grace Thornton Potorti, RAMA	R-170	BR AI	See response R-168.
0022	Grace Thornton Potorti, RAMA	R-171	NE	FAR 91-817 applies to civil aircraft.

Comment/ Letter #	Commentor	Response #	Response Code	Response
0022	Grace Thornton Potorti, RAMA	R-172	NE NO	The EIS provides a thorough analysis of noise impacts. Appendix F provides a thorough description of the various noise metrics used and the rationale for their use in the noise analysis.
0022	Grace Thornton Potorti, RAMA	R-173	NE	Thank you for your comment.
Public Transcripts - Ely	Jane Peterson	PT-1	PA	There are no communication sites proposed under this action.
Public Transcripts - Ely	Jane Peterson	PT-2	NO	Day-Night Average Sound Level (DNL) is a noise metric combining the levels and durations of noise events, and the number of events over a 24-hour time period. It is a cumulative average, computed over a given time period like a year, to represent total noise exposure. DNL also accounts for more intrusive nighttime noise, adding a 10-dB penalty for sounds after 10:00 p.m. and before 7:00 a.m.
Public Transcripts - Ely	Jane Peterson	PT-3	SA	No components of the RR-188 chaff or M-206 flares proposed for use in the MOA/ATCAA airspace pose a threat to human health or the environment to include air quality. Also refer to responses R-126 and R-127.
Public Transcripts - Ely	Jane Peterson	PT-4	BR	A review of the <i>Revised Nevada Bat Conservation Plan</i> provided no evidence of known or well-documented migratory bat routes or patterns in Nevada (Nevada Bat Working Group 2006).
Public Transcripts - Ely	Jane Peterson	PT-5	AM	As provided on page 5-3 of the EIS, the initial White Elk MOA proposal was altered to accommodate the approach path to the Ely airport at Yellen Field for the proposed expansion.
Public Transcripts - Ely	Jane Peterson	PT-6	NE	A discussion of this topic has been added to Section 3.1.4 of the EIS.
Public Transcripts - Ely	Ron Taylor	PT-7	PA	The scope of this proposal does not include the use of the Ely airport as an emergency landing field.
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-8	SO	The best available data was used to make assumptions regarding revenue generated by glider activities at Yelland Field. Sections 3.8 and 4.8, <i>Socioeconomics</i> , of the final EIS have been amended to provide a more complete socioeconomic analysis.
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-9	AM	Life flights that transport time critical patients or donated organs receive priority status through any airspace unit without delay. FAA Order 7110.65 states that operational priority is given to civilian air ambulance flights when verbally requested. Language regarding this topic has been added to the final EIS in Sections 4.4.1 and 4.8.1.
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-10	SO	The findings in the EIS indicate no adverse impacts to development or to the socioeconomic base of White Pine County. The Air Force considered proposed plans for future air service between the Ely and Elko airports and altered their initial MOA proposal so that the approach path to the Ely airport would not be affected. Refer to response P-27.

Comment/ Letter #	Commentor	Response #	Response Code	Response
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-11	SO	See response PT-8.
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-12	AM	Air traffic currently occurs in the region of the proposed MOA. The rules for flight aviation would remain unchanged for all air traffic including gliders. Refer to response A-50.
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-13	AM	See response A-53.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-14	AM	While gliders that are not transponder equipped generally monitor applicable frequencies to allow others to know of their location and intentions while in flight, it is incumbent that all users of the airspace be familiar with proposed usage by the Air Force. Refer to response A-50.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-15	AM	The White Elk MOA proposal does not place restrictions on general aviation or other users. Refer to responses P-11 and A-50.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-16	AM	Refer to responses P-11 and A-50.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-17	AM	Refer to responses P-11 and A-50.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-18	AM	Refer to page 2-5 of the draft EIS. A MOA comprises special use airspace designated by the FAA to identify areas where the military conducts nonhazardous operations and to separate these flight activities from nonparticipating air traffic. Nonparticipating civil and military aircraft flying under visual flight rules (VFR) may transit an active MOA by employing see-and-avoid procedures. When operating under instrument flight rules (IFR), nonparticipating aircraft must receive air traffic control clearance to enter an active MOA. In addition, commercial traffic may transit an active ATCAA under FAA air traffic control guidance and procedures.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-19	SO	Refer to response P-27.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-20	AM	Refer to response A-53.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-21	AM	Refer to response A-50.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-22	PA	The floor of the White Elk MOA would be 14,000 feet MSL. The Air Force has determined this altitude will meet the purpose and need for the proposed MOA.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-23	SO	See responses A-17 and PT-8.

Comment/ Letter #	Commentor	Response #	Response Code	Response
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-24	SO	Refer to responses A-17 and PT-8.
Public Transcripts - Ely	Walter Leianke	PT-25	AM	Refer to responses P-11 and A-50.
Public Transcripts - Ely	Walter Leianke	PT-26	PA	In Section 2.1 of the EIS, the Air Force considered several alternatives for locating the new training airspace. This alternative identification process used six criteria including the relationship to existing military airspace. This process also evaluated locations for their potential conflicts with airports, jet routes, and civil aviation around the UTTR airspace. This process led to the definition of the proposed White Elk MOA which underlies existing airspace.
Public Transcripts - Ely	Lori Carson, White Pine County Commissioner	PT-27	SO	Refer to response PT-10.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-28	AM	The Air Force would mitigate potential impacts with gliders during major glider events. See response A-50.
Public Transcripts - Ely	James Adams, Ely Jet Center	PT-29	AM	Refer to response A-50.
Public Transcripts - Elko	The Crowd	PT-30	NE	Citizens can file a lawsuit over a NEPA decision by using the Administrative Procedures Act (APA). This law provides the basis to challenge decisions or actions taken by Federal agencies. APA allows a person who thinks they have been harmed by a Federal action to obtain judicial review of the action. The judge would determine if the procedures used by the Air Force in arriving at a decision adequately complied with NEPA and the Environmental Impact Analysis Process requirements.

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Fax (775) 752-3021

September 29, 2008

Ms. Sheyl Parker, White Elk MOA
EIS Project Manager, HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley AFB, Virginia 23665-2769

To whom it may concern:

I am opposed to this expansion as it will detrimentally impact the values of farms and ranches in the area and limit the future values for farming and other potential uses. These property owners should be compensated for the loss of real value that they will realize and without compensation I remain opposed to this proposal. P-1

Sincerely,

A handwritten signature in cursive script that reads "Paul Bottari".

Paul Bottari, Broker
Bottari Realty, Inc.
PO. Box 368
Wells, Nevada 89835
775-752-3040



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October 10, 2008

Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews Street Ste. 122
Langley AFB, VA 23665-2769

Dear Ms. Parker:

I am a practicing oral surgeon in Salt Lake City, Utah and the owner of a ranch in Ruby Valley, Nevada which will be in the over-flight area of the White Elk (MOA) (EIS).

I drive from Salt Lake City to Ruby Valley on a regular basis and in looking at the current over-flight areas of the U.S. Air Force, there is a significant amount of the uninhabited western part of the state of Utah which is open air space where low flight aircraft disturb little wild life in the area, what wildlife there is. However, that is not the case in Ruby Valley, Nevada which is an active community of ranchers and livestock which would be significantly disturbed by low flying aircraft.

P-2

P-3

It would appear to me that the border should not include Ruby Valley or Clover Valley, but stay to the east of these valleys and ranges. This objection to extending the border of the White Elk (MOA) further to the west is that it does over fly moderately densely inhabited area of agriculture. Therefore, I am objecting strongly to the current western border of your proposal. I would suggest that it be moved to the Independence Valley where there is little habitation and where the disturbance will be significantly less.

P-4

Thank you for allowing this comment.

Respectfully,

Karl E. Lind, D.D.S.

KEL/gf

September 8, 2008

Attention: Sheryl Parker
HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley Air Force Base, VA 23665-2769

RE: White Elk Military Operations Area

Dear Ms. Parker,

I am opposed to the establishment of a military training airspace above Steptoe Valley in White Pine County, Nevada. This is one of the few places left in this country without major air traffic noise, and the Air Force has been adequately training pilots without this air space. | P-5
| P-6

I have lived through major earthquakes and the sonic boom of airplanes unnerves me. I cannot live with that type of noise. My husband and I have 40 acres on the north side of Ely, and also a ranch about 25 miles north of Ely. It is an immense source of peace to enjoy the quietness here. | P-7


Paula Carson


Ely, NV 

Delaine Spilsbury
[REDACTED]
McGill, NV [REDACTED]
[REDACTED]
[REDACTED]

November 10, 2008

The Honorable Harry Reid, United States Senate
528 Hart Senate Office Building
Washington DC 20510-2803

Greetings Senator Reid,

Creation of the "White Elk Supersonic Operation Area" in White Pine County Nevada is a travesty. Rural residents, American Indian Tribes and many big game species animals (our brothers) will be unfairly subjected to major serious health risks. Targeting us because we are few is unjust and disgusting. White Pine County has few industries and this project will destroy our fledgling Outdoor Tourism Industry including the gliding industry with major gliding events at Yelland Field all summer.

P-8

P-9

There is no reason for Hill Air Force to desecrate pristine Nevada Wilderness areas. They can utilize Nevada Test site airspace. Test Site Land is already poisoned and polluted and there are no residents to harm.

P-10

The military was created to *protect* American citizens and lands, not to *destroy* them. Please don't let this project slide under the door during the last days of this lamebrain, lame duck administration.

We are willing to assist you in your efforts. Thank you,

[REDACTED]
Delaine & Rick Spilsbury, Ely Shoshone Tribe

cc: HQ ACC/A7PP – Ms Sheryl Parker

To: Ms. Sheryl Parker

The proposed expansion of military operations area into Nevada (White Elk Military Operations) is unacceptable. It will profoundly effect those of us who live here; physically, economically, environmentally, and spiritually.

1. With some of our airspace gone, we probably won't see nearly as many gliders in the future. | P-11
2. Our property values will decline due to jet noise and sonic booms. | P-12
3. Our natural spaces will be degraded. | P-13
4. This will be one more reason not to visit White Pine County. | P-14
5. This will be one more reason not to move to White Pine County.
6. Peak noise levels (from sonic booms) will likely harm our hearing.
7. Increased anxiety from loud noise has been shown to result in health problems, such as heart disease. | P-15
8. Property damage has occurred in the past near sonic booms. | P-16
9. Wildlife and livestock will be disturbed significantly. | P-17
10. Flares and chaff will be littered over wilderness and public lands. Flares pose increased fire risk. And over wilderness areas, there doesn't appear to be any fire suppression plans. | P-18
11. Chaff pose health risks if inhaled or ingested.
12. Degradation of my Native (Western Shoshone) homeland will harm us spiritually. This is far more significant than a sonic boom going off during a ritual. This is the desecration of the place that sustains us. | P-19
13. And of course, our tax money will be wasted on excessive, unnecessary training for cold war era threats. More supersonic flight training will not protect us from terrorists. | P-20

Apparently, there was a public hearing in Ely on this on September 2. But nobody I know heard about it. Was it publicized? I've heard about unpopular "public" hearings that the military has conducted without any practical announcements. Either way, we need more time to make our comments. It isn't right that residents here will find out about this after the public comment period is over. | P-21

Thank you,

Richard A. Spilsbury

McGill, NV

NoShootFoot.com

November 11, 2008

Ms. Sheryl Parker
 HQ ACC/A7PP
 129 Andrews Street, Suite 122
 Langley AFB, VA 23665-2769

I live in Baker, Nevada, slightly to the south of the White Elk Supersonic Operation Area. We were bombarded with sonic booms several years ago in this area, and I remember how hard it was to be hit with the sonic booms, and how long it took for nerves and hearing to recover.

P-22

The White Elk Supersonic Operations Area Draft EIS seems to cover up the damaging health impacts of sonic booms by providing only noise level averages while ignoring peak sonic boom noise levels. The Supersonic Operations would destroy the naturalness and solitude of over 87,000 acres of Wilderness and Wilderness Study areas within the Area, including harm to wildlife. An area of special concern includes McGill, Cherry Creek, Lages Station and Currie in White Pine County. Children at the McGill Elementary School will be especially vulnerable to the blasts of solar booms.

P-23

P-24

P-25

Property values are likely to decrease, and damage is likely to structures including historic sites. County Commissioners of counties within the area are concerned about restricted land development, as well as lost revenues to tourism due to commercial and private aircraft restrictions in and out of Ely and Wendover. Flares and chaff debris may well cause not only fires, but serious health risks if inhaled or ingested.

P-26

P-27

P-28

Please reconsider these issues as you work with the draft EIS -- the health of children, older residents and visitors is crucial to the overall livability, comfort and health of the land beneath the Operation Area.

Sincerely,

Tonia Harvey

Baker, NV

Abigail C. Johnson, [REDACTED] Baker, Nevada [REDACTED]

Ms Sheryl Parker
HQ ACC/A7PP
129 Andrews St. Suite 122,
Langley AFB, VA 23665-2769

RE: White Elk Military Operations Area Draft EIS

Dear Ms. Parker:

I am a property owner and part time resident of Baker, Nevada, in White Pine County. I recently learned that the Air Force has prepared a Draft EIS to expand the military airspace operations in White Pine County. Thank you for extending the comment period to allow concerned citizens to learn about the project and prepare comments.

I am concerned that the proposal would create nearly 2,000 supersonic events each year. These sonic booms will adversely affect the residents of McGill, Cherry Creek, Lages Station and Currie in White Pine County. The health effects of sonic booms for human hearing and startle effect are well documented in the literature.

P-29

The above referenced DEIS attempts to mask the damaging health impacts from sonic booms by providing only noise level averages. This is unacceptable. The DEIS should provide the public with the true impacts from peak sonic boom noise levels which can include startle reaction, annoyance, nuisance, interference with speech, sleep and learning, and the physiological effects of anxiety and hearing loss.

P-30

Supersonic Operations would destroy the naturalness and solitude of over 87,000 acres of wilderness and wilderness study areas including Becky Peak, Goshute Canyon, High Schells, South Pequop WSA and Goshute Canyon WSA. I am also concerned about the impacts on wildlife in the area.

P-31

The Air Force proposal would have a negative impact on the economy of White Pine County by restricting land development under the airspace, and lost revenue and impacts on tourism due to commercial and private aircraft flight restrictions in and out of Ely and Wendover airports, and would impact future projects and provide no direct economic benefit. Please note that Nevada's only national park is in White Pine County and that the airport in Ely is a gateway access to the Great Basin National Park. Air restrictions in and around Ely could adversely affect tourist access to this national treasure.

P-32

P-33

A by-product of the proposal is the 40,000 bundles of fibrous chaff and 31,000 flares that would be strewn over the affected land area. Increased fire danger in this dry country is unacceptable. The components of chaff, including aluminum and silica, pose serious health risks if inhaled or ingested. Over time, this non-biodegradable chaff will fragment into inhalable particles which could be resuspended into the atmosphere.

P-34

Nevada is not a wasteland. This proposal treats the human and wildlife inhabitants of this beautiful part of Nevada as disposable. We have the right to live without being subject to the unacceptable booms and debris of this project. White Pine County's economy and tourism base should be protected, not threatened, by the impacts of this far reaching project.

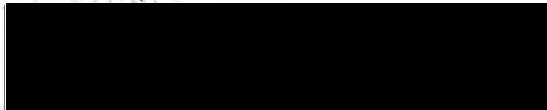
P-35

Rural residents of eastern Nevada will be subjected to noise and sonic booms that would be unacceptable over a large city. Noise impacts unacceptable to urban residents are also unacceptable to rural residents.

P-36

Thank you for considering my comments.

Sincerely,

A large black rectangular redaction box covering the signature of Abigail C. Johnson.

Abigail C. Johnson

cc: Senator Harry Reid



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

BEN SHELLY
VICE-PRESIDENT

September 18, 2008

Ms. Sheryl Parker, HQ ACC/A7PP
Installations and Mission Support
129 Andrews Street, Suite 122
Langley AFB, VA 23665-2769

Subject: Tribal Consultation Request. Proposing comments on the White Elk Military Operations Area Environmental Impact Statement.

Dear Ms. Parker:

Our apology for an oversight and missing the deadline date of our response to your request, please note that in reference to your letter August 13, 2008, the Historic Preservation Department – Traditional Culture Program (HPD-TCP) received a request for consultation regarding the above undertaking and/or project. After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** any Navajo traditional cultural properties or historical properties. The project is outside the Navajo Aboriginal Boundary.

The HPD-TCP appreciates your agency's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have additional concerns and/or questions, do not hesitate to contact me. My contact information is listed below.

NN-1

Sincerely,

Mr. Tony Joe, Program Manager
Historic Preservation Department – Traditional Culture Program

Tel: 928.871.7688

Fax: 928.871.7886

E-mail: tonyjoe@navajo.org

TCP 08-909

File: Office file/chrono



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

BEN SHELLY
VICE-PRESIDENT

October 16, 2008

ATTN: Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley AFB, VA 23665-2769

Subject: Tribal Consultation Request. Proposing public comments on White Elk Military Operations Area (MOA) Environmental Impact Statement (EIS), Nevada.

Dear Ms. Parker:

Our apology for an oversight and missing the deadline date of our response to your request, please note that in reference to your letter of October 06, 2008, the Historic Preservation Department – Traditional Culture Program (HPD-TCP) received a request for consultation regarding the above undertaking and/or project. After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** any Navajo traditional cultural properties or historical properties.

However, if there are any inadvertent discoveries made during the course of the undertaking, your agency shall cease all operations within the project area. HPD-TCP shall be notified by telephone within 24 hours and a formal letter be sent within 72 hours. All work shall be suspended until mitigation measures/procedures have been developed in consultation with the Navajo Nation.

NN-2

The HPD-TCP appreciates your agency's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have additional concerns and/or questions, do not hesitate to contact me. My contact information is listed below.

Sincerely,

Mr. Kelly Francis, Cultural Specialist
Historic Preservation Department – Traditional Culture Program

Tel: 928.871.7688

Fax: 928.871.7886

E-mail:

TCP 09-081
File: Office file/chrono



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Elko District Office
3900 East Idaho Street
Elko, Nevada 89801
<http://www.nv.blm.gov>



In Reply Refer To:

OCT 1 2008

Ms. Sheryl Parker
White Elk MOA EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley AFB, Virginia 23665-2769

Dear Ms. Parker:

Thank you for the opportunity to comment on the White Elk MOA EIS Project. In general, our specialists were pleased that the current draft EIS has adequately addressed our earlier comments concerning wildlife, fire, wild horses, and WSA issues. Our final comments are mainly editorial in nature, and are included below:

1. In addition to receiving CDs of the NEPA documents, the BLM, Elko District, would appreciate receiving one hard copy of the Final EIS and Record of Decision. If the Final EIS is published as an abbreviated EIS, we would also appreciate receiving in a hard copy of the Draft EIS for future reference. Instead of mailing the documents to the individuals at the Elko District (as noted in Appendix A, Attachment D), please update your mailing list and address future documents to:
BLM, Elko District
Attn: Bryan Hockett, Wells Field Office
3900 E. Idaho Street
Elko NV 89801
2. Since you initiated scoping for this EIS, BLM has re-organized. Suggest you generally replace references to the Elko "Field" Office" with Elko District; and Ely Field Office with Ely District. Within the Elko District, all public lands that the proposed White Elk MOA project overlies public lands that are in the eastern half of the Elko District, and this resource area is managed by the Wells Field Office.
3. Other specific comments:

Chapter - Section	Page	Comment
2.2.1 Establishment of the White Elk MOA	2-15 3-18	Table 2-2 refer to the Goshute Canyon Wilderness (Ely District) and the Goshute Canyon WSA (BLM Elko District). The Elko District includes the Goshute Peak WSA. The table gives a 'representative elevation' of 7,054 MSL, and the site is later used as a "Noise Point" (Figure 3.3-1 , P. 3-18). IF the site is located in the Goshute Peak WSA, its elevations range from 6,000 -9,500 ft. It would be more meaningful to use a high point to represent concerns for noise on visitors and wildlife from proposed operations over the WSA.

Chapter - Section	Page	Comment	
3.4.1 Ground Safety <i>Fire Risk and Management</i>	3-23 to 3-26	This is an example where it would be more accurate to change reference to the Elko and Ely “Field Office” to “District.” The text and maps for the respective fire management plans cover all lands in each district (BLM 2004; BLM 2007).	A-2
3.5.1 Land Use	3-32 3-33	This is another example of where the text could be revised to reflect that, within the Elko and Ely Districts, land is managed by Field Office units.	A-3
3.5.1 Land Use	3-33	For Fig. 3.5-1 , Land Status and Ownership, a label for “Elko County” appears in White Pine County, below the White Elk MOA label. It may be appropriate to delete the “ROW” for the Nevada Wind Company. At this point in time, BLM has only ‘reserved’ a ROW until a plan for development for a wind energy project is submitted for analysis. It would be speculative to discuss impacts on preliminary wind energy projects as ‘reasonably foreseeable’ before the proponent submits a plan of development that would initiate preparation of an EA or EIS.	A-4
3.5.1 Land Use	3-33 3-35	If possible, it would be helpful if the “Land Status and Ownership” map (Figure 3.5-1) was revised (or a new map created, see next comment) to correspond to Table 3.5-2 , “Wilderness Areas and WSAs Underlying the Proposed White Elko MOA and Currie/Tippet ATCAA in Acres.” Also, please verify name of Goshute <i>Canyon</i> Wilderness (Ely District), and correct the name for the Goshute Peak WSA (Elko District).	A-5
3.5.2 Recreation and Visual Resources	3-36	A wilderness map should label and show the entire Wilderness and Wilderness Study Areas, including the areas underlying the low-level flights in the (Gandy/Lucin?) MOAs. This would better support the analysis for (direct/indirect and possibly cumulative) impacts on visitors and wildlife in the areas. Visitors in the South Pequop, Goshute Peak and Bluebell WSAs in the Elko District have been and will continue to be affected by noise, so a map to support the analysis of impacts should show the extent of all three WSAs in relation to the ongoing and proposed military training operations.	A-6
3.5.2 Recreation and Visual Resources	3-37	The discussion for wilderness is limited to areas in the Ely District. Please add information for the Elko District WSAs. This should include the fact that, “ <i>The South Pequop, Goshute Peak and Bluebell WSAs are already impacted by noise from low level flights in the existing MOAs.</i> ”	A-7
4.5 Land Use, Recreation and Visuals	4-17	The analysis for noise begins with an ‘urban’ significance threshold of 65 DNL (P. 4-17). The threshold should be different for visitors to wilderness areas; the impact of concern is how noticeable the activities would be. The analysis of the Proposed Action vs. No Action on visitors should identify any future change in subsonic noise levels as well as sonic booms. For booms, the analysis concludes that, “... <i>the relative short duration of the boom and relative infrequency would still allow the visitors to experience the wilderness characteristics of the area</i> ” (P. 4-18). The analysis should further state if the subsonic noise is expected to detract from the solitude sought by visitors to the wilderness/study areas. Per BLM Interim Wilderness Management Policy and for the Elko District WSAs, the EIS should disclose if ongoing and proposed operations would impair the suitability of the WSAs for designation as wilderness.	A-8
4.6 Biological Resources <i>Wildlife</i>	4-21	Suggest you add a section for the risk of bird/aircraft strikes to migratory birds, including ‘sensitive raptors of concern’ to the BLM and/or Nevada Department of Wildlife. The analysis for Public Safety (4.4) and Bird/Aircraft Strikes (Page 4-16) explains that the BASH team’s Bird Avoidance Model assessed the potential for strikes to predict relative risk	

Chapter - Section	Page	Comment
		‘during ‘selected time frames in specific geographic areas.’ The analysis identifies a moderate risk in the Gandy MOA (floor is 100 feet AGL), but operations in the proposed White Elk would not occur below 14,000 feet MSL. What altitudes are migrating birds (especially raptors) known to use? Do they stay below 14,000 feet MSL? BLM is especially concerned about the potential for aircraft strikes with thousands of migrating raptors in the vicinity of the Goshute Peak WSA from late August through mid-December (BLM 1987). Given the low ceiling of the Gandy MOA floor, it is unclear if the model considered historical information on strikes with migrating raptors in August/September. The analysis could also consider data/reports from annual raptor counts and trend studies. Any ‘risk’ of collision in the existing and proposed MOA with a sensitive raptor and/or migratory bird of concern could be an adverse impact that should be discussed in this EIS. This includes the potential for incidental ‘take’ (as defined by the Migratory Bird Treaty Act), and the potential for contributing to any decline in populations that could lead to listing under the Endangered Species Act.
4.6 Biological Resources <i>Special Status Species</i>	4-21	Suggest you change the title to “Threatened or Endangered Species” and limit the discussion to federally listed (and proposed) species under the ESA. BLM defines “Special Status Species” to include candidates for listing under the ESA, plus species protected under state law and “BLM-Sensitive” species (each BLM state office periodically updates this list). BLM’s special status species policy is to ensure our actions do not lead to listing under the ESA. In the <i>Wildlife</i> section, the discussion for (lack of impacts) to the candidate pygmy rabbit could be included, along with the discussion for the sensitive birds. This would then support the conclusion that no ‘federally-listed’ species would be adversely affected by the proposed action.
4.6 <i>Wetlands and Jurisdictional Water of the U.S.</i>	4-22	Do Air Force NEPA procedures require that every EA or EIS include a discussion of this topic? Although they may not be recorded in a public database, wetlands and jurisdictional waters likely exist in the landscape underlying the proposed White Elk MOA. However, since the proposed action does not involve any modifications that could affect wetlands or waters (such as filling wetlands or crossing streams), could this topic be eliminated from this EIS, as an insignificant issue?
6.0 References	6-1	<p>All documents for the Wells Resource Management Plan and related wilderness recommendations are available for viewing and downloading from the public webpage at www.blm.gov/nv and navigating to the Elko District homepage, then the Program/Planning webpage.</p> <p>1) Correct the title for the Elko District FEIS to read: BLM. 1987. Wells Wilderness Recommendations, Final Resource Management Plan/Final Environmental Impact Statement. Information for the Goshute Peak and South Pequop WSAs is also available from this document on the Elko/planning webpage.</p> <p>2) Add reference to the RMP ‘decision’ document for the Elko District: BLM. 1985. Record of Decision, Wells Resource Management Plan. Elko, Nevada.</p> <p>3) If you use any information from the Wells RMP Draft EIS, the reference for it is: BLM. 1983. Draft Wells Resource Management Plan and Environmental Impact Statement. Note that also in 1983, BLM issued the “Proposed Wells Resource</p>

A-9

A-10


A-11

A-12

Chapter - Section	Page	Comment
		Management Plan and Final Environmental Impact Statement.” However, that was an abbreviated EIS, and so of limited use for referencing purposes.)

If you have any questions, please contact Bryan Hockett of my staff at (775) 753-0276, or you may reach him via email at Bryan_Hockett@nv.blm.gov.

Sincerely,



Bryan K. Fuell, Manager
Wells Field Office



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007



September 22, 2008

9043.1
ER 08/855

Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23655-2769

Dear Ms. Parker:

The Department of the Interior has reviewed the draft Environmental Impact Statement for the White Elk Military Operations Area, Proposal to Establish a New Military Operations Area Linked to the Utah Test and Training Range Air Spaces, Hill Air Force Base, Utah, and has no comments.

A-13

Sincerely,

Robert F. Stewart
Regional Environmental Officer



Elko County Board of Commissioners

569 Court Street • Elko, Nevada 89801
775-738-5398 Phone • 775-753-8535 Fax

COMMISSIONERS
SHERI L. EKLUND-BROWN
JOHN ELLISON
CHARLIE L. MYERS
WARREN RUSSELL

ELKO COUNTY MANAGER
ROBERT K. STOKES

EXECUTIVE ASSISTANT
MICHELE A. PETTY

September 26, 2008

Ms. Sheryl Parker, EIS Project Manager
HQACC/A7PP
129 Andrews Street, Suite 122
Langley AFB, VA 23665-2769

RE: White Elk Military Operations Airspace (MOA) Expansion Draft EIS

Dear Ms. Parker:

After reviewing the Draft EIS, the Elko County Board of Commissioners continues to have concerns that there will be negative impacts to our local economy, assessed value and future economic growth if the White Elk MOA designation is approved. This letter outlines the issues raised from our January 7, 2008 letter that we feel have not been addressed by the Draft EIS. We have information that up to 50% of the airspace in the State of Nevada has been designated for MOAs which limits future growth and development. Elko County **does not support** the draft EIS that will allow the designation of the expanded MOA in Elko County.

A-14

A-15

A-16

Although we cannot fully quantify all the negative impacts to our County at this time, we feel it is appropriate to request retribution to mitigate damages in the order of \$20,000,000 if the White Elk MOA designation is approved. The Draft EIS, in our opinion, does not adequately address the potential impacts to our County, herein listed for reference:

A-17

Economic Development Impacts:

- *Land Restrictions for Development | A-18
- *Ceiling Restrictions | A-19
- *Flight restrictions for commercial and private aircraft | A-20
- *Proposed and future Wind Energy Projects | A-21
- *Potential Power Plants | A-22
- *Economic and flight corridor loss impacts to Wendover, Utah and Ely, Nevada Airports | A-23
- *Tourism- commercial and private | A-24
- *Loss of centrally accessed tax revenue from decreased commercial flights over Elko County | A-25

Ms. Sheryl Parker
White Elk Military Operations Airspace Draft EIS
September 26, 2008
Page 2

- *No direct social or economic benefit to Elko County given that Hill Air Force Base is an out of state military base. ■ A-26
- *Out of state employees, tax revenues and job creation. ■ A-27
- *Very limited corridors already in existence ■ A-28

Safety Discussion Issues: (Colon)

- *Elko County experiences major annual wildfire activity during the summer. Restricted air space clearance for fire suppression air support; single-engine, helicopters and large tankers ■ A-29

Environmental Discussion Issues: (Colon)

- *Wild horse gathers and census work ■ A-30
- *Sound barrier, turbulence, visual, targets, ground impacts ■ A-31
- *Birthing Rates impact to livestock and wildlife ■ A-32
- *Wildlife habitat-critical habitat for numerous T & E species ■ A-33
- *Impacts to Wilderness Study Areas (WSAs) ■ A-34
- *Equipment on ground; towers, transmitters, etc. and associated impacts ■ A-35
- *Native American economical, social and cultural issues ■ A-36

Elko County expresses very clearly that we stalwartly support the U.S. Military and our service men and women. Our emphatic opposition to this EIS is not directed towards our military or military preparedness. A number of members of our Commission are seasoned veterans and this Board fully supports the war on terrorism facing our Country and the required training necessary to accommodate simulated air tactic training. It is our concern that other options are available that have not been fully analyzed and do not present the negative impacts to our culture, economy and land uses in Elko County. We strongly urge the Air Force and National Defense to strategize towards locating this and other proposed air space expansion projects, in specific reference to Mt. Home Air Force Base, in close proximity to the areas and states which benefit in social and economic circumstances from base location. It also is thoroughly apparent throughout the Draft EIS that this document is not objective or comprehensive to any degree, in regards to analysis of alternative air space expansion locations, nor adequate scrutiny to the potential impacts of the requested expansion. The Draft EIS flagrantly disregards all impact analysis, is in the opinion of the Elko County Commission a biased representation of the facts and should not be approved in its current proposed form. Please feel free to contact me at (775) 738-5398 to make arrangements for needed discussions on this important matter.

■ A-37

■ A-38

■ A-39

■ A-40

**Ms. Sheryl Parker
White Elk Military Operations Airspace Draft EIS
September 26, 2008
Page 3**

Sincerely,

A handwritten signature in black ink, appearing to read "Sheri Eklund Brown". The signature is fluid and cursive, with the first name "Sheri" being the most prominent.

**Elko County Board of Commissioners
Sheri Eklund Brown, Chair**

**cc: Honorable Harry Reid, United States Senate
 Honorable John Ensign, United States Senate
 Honorable Dean Heller, United States House of Representatives
 Honorable Shelley Berkley, United States House of Representatives
 Honorable Jon Porter, United States House of Representatives
 Honorable Jim Gibbons, Governor of Nevada
 Honorable Dean Rhoads, Nevada State Senate
 Honorable John Carpenter, Nevada State Assembly
 Honorable Josephine Thaut, Mayor of West Wendover, Nevada
 White Pine County Board of County Commissioners
 Ms. Barbara Fisher, Hill Air Force Base
 BLM Elko Field Office
 Nevada Department of Wildlife
 Goshute Tribe
 Nevada Power
 LS Power**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

Ref: EPR-N

14 October 2008

ATTN: Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley AFB, VA 23665-2769

Dear Sheryl Parker:

Re: Proposed White Elk Military Operations Area
DEIS [CEQ# 20080313]

In accordance with our responsibilities and authorities under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act, the Region 8 office of the U.S. Environmental Protection Agency (EPA) has reviewed and is providing a CEQ rating for the Draft Environmental Impact Statement (DEIS) for the proposed White Elk Military Operations Area (MOA).

The purpose for the DEIS is to analyze the environmental effects of designating additional airspace in northeastern Nevada adjacent to Hill AFB, Utah, that would provide military pilot training opportunities that cannot be accomplished in the existing Utah Test and Training Range (UTTR). The MOA would underlie the existing Currie and Tippet Air Traffic Control Assigned Airspace managed by the Federal Aviation Administration (FAA), a cooperating agency during this NEPA process. The FAA and the USAF could identify no reasonable alternatives to the proposed alternative despite early attempts to define new airspace for this purpose and need. We defer to the FAA, which has jurisdiction by law or special expertise for administering all navigable airspace in the public interest of safety.

The DEIS documents the process that analyzed impacts identified during the scoping hearings. We reviewed a transcript of these hearings and were satisfied with the public involvement process required by NEPA. Environmental impacts were assessed and mitigation measures were designed to address the following relevant planning issues organized into nine relevant resource categories:

- Regional energy development projects
- Civil/commercial aircraft flight operation compatibility
- Access to local general aviation airports
- World-class glider aircraft flight opportunities for public recreation
- Ground effects of sonic booms from military aircraft

In general, the DEIS is well organized and thorough in its analysis of impacts. It also clearly demonstrates that impacts from the proposed alternative will not be significant. EPA evaluates the potential effects of a proposed action and the adequacy of information in the Draft EIS. EPA rates this proposal to establish the White Elk MOA with a Lack of Objection ("LO") under our rating criteria. The "LO" rating means that our review has resulted in finding no environmental impacts that have not been effectively mitigated in the proposed alternative. We are raising no objections to the proposed action.

We appreciate the opportunity to provide comments at this stage of the project. If you have any questions or would like to discuss our rating, please contact me (303 312-6004) or James Hanley (303) 312-6725 of my staff.

A-41

Sincerely,



Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection
and Remediation



U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO -- Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC -- Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO -- Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU -- Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 -- Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 -- Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 -- Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.



DEPARTMENT OF ADMINISTRATION

209 E. Musser Street, Room 200

Carson City, Nevada 89701-4298

(775) 684-0222

Fax (775) 684-0260

<http://www.budget.state.nv.us/>

September 22, 2008

Ms. Sheryl Parker
US Air Force
Air Combat Command
HQ ACC/A7PP
129 Andrews Street
Suite 122
Langley AFB, VA 23665-2769

Re: SAI NV # **E2009-079**

Reference:

Project: **White Elk MOA, extension of military airspace in northeastern Nevada**

Dear Ms. Sheryl Parker:

Enclosed are comments from the agencies listed below regarding the above referenced document. Please address these comments or concerns in your final decision.

Division of State Lands

The following agencies support the above referenced document as written:

State Historic Preservation Office

This constitutes the State Clearinghouse review of this proposal as per Executive Order 12372. If you have questions, please contact me at (775) 684-0213.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Tietje".

R. Tietje
Nevada State Clearinghouse

Nevada State Clearinghouse

From: Skip Canfield
Sent: Wednesday, September 10, 2008 2:42 PM
To: Nevada State Clearinghouse
Subject: RE: E2009-079 White Elk MOA, extension of military airspace in northeastern Nevada - Air Combat Command

The Nevada Division of State Lands defers to White Pine County for any concerns about this airspace extension.

A-43

Skip Canfield, AICP

From: Nevada State Clearinghouse
Sent: Monday, August 25, 2008 3:27 PM
To: Skip Canfield
Subject: E2009-079 White Elk MOA, extension of military airspace in northeastern Nevada - Air Combat Command



NEVADA STATE CLEARINGHOUSE

Department of Administration, Budget and Planning Division
 209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
 (775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 8/25/2008

Division of State Lands

Nevada SAI # E2009-079

Project: White Elk MOA, extension of military airspace in northeastern Nevada

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.

[E2009-079](#)

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Friday, September 19, 2008.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

9/11/2008

Rebecca Palmer

From: Nevada State Clearinghouse
Sent: Monday, August 25, 2008 3:27 PM
To: Rebecca Palmer
Subject: E2009-079 White Elk MOA, extension of military airspace in northeastern Nevada - Air Combat Command



NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 8/25/2008

State Historic Preservation Office

Nevada SAI # E2009-079

Project: White Elk MOA, extension of military airspace in northeastern Nevada

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.

[E2009-079](#)

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local

areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Friday, September 19, 2008.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include

the Nevada SAI number and comment due date for our reference.

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

☐ No comment on this project ☒ Proposal supported as written

AGENCY COMMENTS:

Rebecca Palmer

9/16/08

A-44

8/25/2008



SOUTHERN NEVADA WATER AUTHORITY

100 City Parkway, Suite 700 • Las Vegas, NV 89106
MAILING ADDRESS: P.O. Box 99956 • Las Vegas, NV 89193-9956
(702) 862-3400 • snwa.com

September 29, 2008

Sheryl Parker
HQ ACC/A7PP
129 Andrews St., Room 317
Langley Air Force Base, VA 23665-2769

Dear Ms. Parker:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WHITE
ELK MILITARY OPERATIONS AREA PUBLIC COMMENTS

The Southern Nevada Water Authority (SNWA) appreciates the opportunity to provide public comments on the Draft Environmental Impact Statement (EIS) for the proposed White Elk Military Operations Area. SNWA has applied for rights-of-way from the Bureau of Land Management (BLM) to construct the SNWA Clark, Lincoln, and White Pine Counties Groundwater Development (GWD) Project in eastern Nevada. The BLM is currently preparing an EIS for the GWD Project.

In September 2006, SNWA, Bureau of Indian Affairs, Bureau of Land Management, National Park Service, and U.S. Fish and Wildlife Service entered into a stipulated agreement. As part of the agreement, SNWA is responsible for hydrological and biological monitoring, management, and mitigation for the development of groundwater in Spring Valley. As part of the data collection activities associated with the stipulated agreement and other environmental compliance for the GWD Project, SNWA has been collecting aerial imagery in Spring and Snake Valleys, in eastern Nevada and western Utah. This imagery is collected by aircraft flying at elevations of approximately 9,500 to 17,500 feet above sea level. Standard procedure for the flights includes coordination with both the civilian and military Air Traffic Control (ATC) in the regions where imagery is acquired.

SNWA understands from the Draft EIS, that civil and commercial aviation activities would continue to be allowed across the proposed White Elk Military Operations Area. As collection of aerial imagery across this area will continue to be a critical aspect of long-term monitoring for the GWD Project and stipulated agreement, SNWA requests that this be considered in U.S. Air Force use of the area.

A-45

SNWA appreciates the opportunity to comment on the proposed project, and requests to be placed on the proposed project mailing list. If you have any questions regarding these comments or need additional information, please contact Chiaki Brown, Environmental Planner, at (702) 691-5384 or myself at (702) 862-3713.

A-46

Sincerely,

Zane L. Marshall
Environmental Resources Division Manager

ZLM:CB:df

c: Chiaki Brown, Environmental Planner I

SNWA MEMBER AGENCIES

Big Bend Water District • Boulder City • Clark County Water Reclamation District • City of Henderson • City of Las Vegas • City of North Las Vegas • Las Vegas Valley Water District

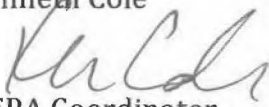
Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews St, Room 317
Langley AFB, VA 23665-2769
Comm: 757.764.9334

RE: White Elk Military Operations Area Draft Environmental Impact Statement (EIS)

Western Watersheds has reviewed the White Elk Military Operations Area Draft Environmental Impact Statement (EIS) and is concerned about the adverse impacts of the proposed action on bighorn sheep, pygmy rabbits, desert tortoise, and other wildlife. We are concerned that an average of 10 sonic booms per day will have large adverse cumulative impacts on wildlife resources especially the sensitive species which utilize the area of the proposed expansion.

A-47

Kenneth Cole



NEPA Coordinator
Western Watersheds Project
P.O. Box 2863
Boise, ID 83701

Laurie L. Carson, Commissioner
Brent Eldridge, Commissioner
Gary Lane, Commissioner
RaLeene Makley, Commissioner
David Pound, Commissioner
Donna M. Bath, Ex-Officio Clerk of the Board

Courthouse Annex
801 Clark Street, Suite #4
Ely, Nevada 89301
(775) 289-2341
Fax (775) 289-2544

White Pine County Board of County Commissioners

September 25, 2008

Ms. Sheryl Parker, HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley AFB, VA 23665-2769

RE: White Elk Military Operations Area
Draft Environmental Impact Statement

Dear Ms. Parker:

I am pleased to provide comment on the Draft Environmental Impact Statement for the White Elk Military Operations Area.

The White Pine County Commission provided scoping comments expressing concern about the potential negative economic impact the expansion of the Military Operations Area may have on the community's tourist revenue from gatherings of glider enthusiasts and the publicity from the world records set by gliders utilizing our airport.

A-48

The Commission is pleased that the Draft EIS acknowledges those concerns, but we are disappointed to see that the EIS Executive Summary draws the conclusion that the Air Force anticipates no adverse impacts to economic development in the region and that the revenues generated from general aviation and recreational glider activity will not change. As noted in the comments filed by our Airport Advisory Board Chairman, James Adams, during the public hearing held in Ely earlier this month, the loss in altitude available for glider flights will have a significant, negative impact on the area's ability to attract gliders and glider events. Section 4.8 of the Draft EIS restricts potential mitigation to the glider meets in July and August and does not include the impact of individual glider pilots staying in the area to take advantage of the best conditions to attempt to set world records. The publicity these pilots generate provides marketing that attract interest and investment to our community. In addition, the increased restrictions of the additional Military Operations Area will deter general aviation pilots from flying through our area and utilizing the services of our airport.

A-49

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A-52

The socio-economic analysis in Section 3.8 of the Draft EIS is very limited and considers only total population and labor force as economic indicators. The County Commission

David A. Pound
September 25, 2008
Page 2

is especially concerned about our senior citizens and our low and moderate-income households. Our community is 250 miles from the closest urban hospital services. We rely heavily on life flights to transport patients suffering from critical illness and injury to hospitals in Salt Lake City, Las Vegas, and Reno so that they can receive specialized treatment. Our population is 13.5 percent senior citizens who are most prone to needing emergency and specialized medical care. In addition, 65 percent of our households are in the Low and Moderate Income categories. Life flights costs are dependent on time and distance. When the Military Operations Area is active and flights must be diverted around the areas, the additional time threatens the survival of the patient and the additional fuel required increases the costs of the flight for the patient.

A-53

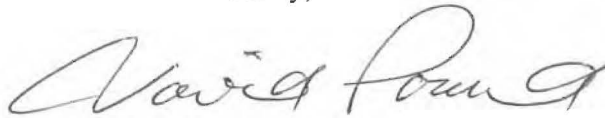
The White Pine County Commission sincerely hopes that the Air Force will consider the need to provide a more thorough analysis of the County's demographic profile, economic conditions, and potential impacts from the proposed action as it completes the Final EIS. We ask that you include a more detailed analysis of the potential economic impact of the expansion and the restriction of general aviation and recreation glider activity on the County's economy.

A-54

A-55

Thank you for your consideration.

Sincerely,



David A. Pound,
Chairman

cc: Senator Harry Reid
Senator John Ensign
Congressman Dean Heller

LEMICH LAW CENTER

GEORGE LEMICH, P.C.

ADMITTED IN WYOMING AND COLORADO

205 C Street
Rock Springs, WY 82901
Telephone (307) 382-6600
Toll Free (800) 551-6604
Facsimile (307) 382-4989

October 30, 2008

HQ ACC/A7PP

129 Andrews Street, Suite 122

Langley AFB, VA 23665-2769

ATTN: Ms. Sheryl Parker

**Re: Draft Environmental Impact Statement No. 20080313 (DEIS)
White Elk Military Operations Area**

Dear Ms. Parker:

This office represents Peppertree Limited Liability Company. Peppertree Limited Liability Company (Peppertree) owns a ranch in the area affected by the proposed Military Operations Area (MOA) identified as the White Elk MOA. Peppertree currently leases Bureau of Land Management lands for cattle grazing. Peppertree has reviewed the Draft Environmental Impact Statement (EIS) and does hereby submit an objection.

The United States Air Force was made aware of concerns about how the MOA will affect livestock production. In a 1988 study, the United States Air Force noted that livestock have an apparent startle effect when subject to sonic booms. It was further noted that the startle effect may be more severe when cattle are under a physiological condition such as gestation.¹ The United States Air Force assessed neither the impact the MOA will have on weight gain of grazing livestock nor reproductive health and success of grazing livestock or other mammals.

A-56

The United States Air Force did not consider the effect the MOA will have on property value. Substantial research indicates that aircraft noise reduces property values by up to one percent (1%) per decibel of noise increase. Importantly, the Draft EIS did not produce noise contours for unpopulated federal lands. Peppertree's property value is

A-57

A-58

¹ Gladwin, D.N., K.M. Mancini, and R. Vilella. 1988. Effects of aircraft noise and sonic booms on domestic animals and wildlife: bibliographic abstracts. U.S. Fish Wildl. Serv. National Ecology Research Center, Ft. Collins, CO. NERC-88/32. 78 pp.

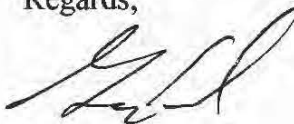
Sheryl Parker
Page 2 of 2
October 30, 2008

directly tied to utilization of grazing leases on unpopulated federal land. Though the United States Air Force did consider economic impacts, it failed to assess to what extent the MOA will decrease private landowner's property values, especially those landowners whose private holdings derive substantial value from unpopulated federal lands.

A-59

For the foregoing reasons, Peppertree Limited Liability Company opposes the White Elk Military Operations Area.

Regards,

A handwritten signature in black ink, appearing to read 'G. Lemich', written in a cursive style.

George Lemich

c: Peppertree Limited Liability Company

lf

HQ ACC/A7PP
129 Andrews Street Suite 122
Langley AFB, VA
23665-2769
Attn: Ms. Sheryl Parker



October 13, 2008

RE: Comments on the White Elk MOA Draft EIS

Dear Sirs:

Thank you for extending the comment period on this proposal which is of great concern to many Nevadans. These comments are on behalf of Friends of Nevada Wilderness. We have about 1,400 members, many of whom live near or recreate in the area that your proposal would impact. Our organization has been directly involved in White Pine County since the mid 1980's being instrumental in the creation of the Great Basin National Park as well as the Mt. Moriah Wilderness in 1989. From about 2003 until 2007, in addition to our members and volunteers we had a staff person living in Ely working cooperatively with the communities in White Pine County including Baker, McGill, Ely, Lund, Ruth, etc on federal legislation that included wilderness designation. With the passage of the White Pine County Conservation, Recreation and Development Act of 2006, an additional 558,000 acres of wilderness was added within White Pine County. Many of these recently designated wilderness areas such as Goshute Canyon, High Schells, Government Peak and Becky Peak Wilderness Areas would be severely impacted from this proposal.

A-60

Through partnerships with the Forest Service and Bureau of Land Management, we recruit and manage volunteers that are on-the-ground in these wilderness areas completing wilderness stewardship projects and doing wilderness monitoring. This proposal would negatively impact not only the wilderness values themselves but our members and volunteers who would be in these wilderness areas.

A-61

The Wilderness Act defines wilderness in part as an area that has "outstanding opportunities for **solitude or a primitive and unconfined type of recreation.**" We recognize that the Wilderness Act does not in and of itself regulate use of airspace above the wilderness area although FAA has voluntary height restrictions to lessen impacts to the visitor and wilderness resources. We also recognize that the White Pine County legislation specifically allows for military overflights in Section 326 of the act.

What is being proposed, however, goes far beyond occasional military overflights. We are very concerned with the effects the supersonic operations will have on the well being of the families that live near these proposed operations. We do not believe the Draft EIS adequately addresses the impacts to either the human or wildlife inhabitants affected by the proposal.

A-62

We are also very concerned with impacts to the Native American communities and to the precious archeological resources specifically the rock art. Sonic booms have been found to

A-63

accelerate the exfoliation of rocks which directly impacts rock art. This loss is both irretrievable and irreversible.

We are further concerned with safety issues for equestrian wilderness users from sonic booms. Horses are easily spooked and many of these areas are popular for hunting, guided and non-guided trips. Safety concerns also arise from sonic booms causing teetering rocks to fall on hikers or climbers. Since this area is riddled with caves and very popular for cavers, we are also concerned with potential rock falls within the caves themselves both from a public safety standpoint as well as from the damage to delicate cave formations.

We do not feel the EIS adequately addresses the potential damage to wilderness resources from flares, chaff and other materials that would be routinely used in this proposed area. What are the procedures that would be used for cleaning up this material within the wilderness areas? How would wilderness values be maintained? Fires starting from the use of flares could have ecologically devastating impacts in many of these areas from stand replacing fires. This means that healthy sagebrush communities could be replaced by fields of cheatgrass. With global climate changes, military induced fires could be catastrophic.

Overall, we do not feel that the military has adequately addressed all the issues and concerns from the public.

Additionally, we wish to incorporate by reference as part of our comments the comments from the Rural Alliance for Military Accountability, dated October 30, 2008.

Thank you for your consideration.

Sincerely,



Shaaron Netherton
Executive Director

Friends of Nevada Wilderness

November 13, 2008

HQACC/A7PP
129 Andrews Street Suite 122
Langley AFB, VA 23665-2769
Attn: Ms. Sheryl Parker

Western Watersheds Project would like to add these comments to the record for the White Elk Military Operations Area (MOA) Draft Environmental Impact Statement (EIS).

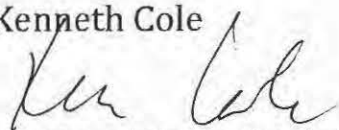
We are very concerned about the negative impacts the proposed actions will have on sage grouse, pygmy rabbits, bighorn sheep and many other sensitive species.

A-70

As mitigation for any additional stressors to the many sensitive species which inhabit much of the impact area, we would like to see substantially reduced levels of livestock grazing on these lands. We are concerned about the cumulative impacts that these lands and habitats are incurring and any additional stressor must be accompanied by a reduction in grazing on the ground. These lands are at a tipping point with regard to sage grouse, pygmy rabbits, bighorn sheep and many other sensitive species which are struggling to hang on.

A-71

Kenneth Cole



Western Watersheds Project
P.O. Box 2863
Boise, Idaho 83712

To: HQ ACC/A7PP, Attn. Sheryl Parker
129 Andrews Street, Ste. 122
Langley AFB, VA 23665-2769

From: Jo Anne Garrett
P. O. Box 130
Baker, NV 89311

Re: White Elk Military Operations Area

Please register our strong rejection of the proposed White Elk MOA that would overlie White Pine County, Nevada. I live in White Pine County, and my home is adjacent to Great Basin National Park, in the South Snake Range. Due north is the North Snake Range, over which the proposed MOA would lie.

A-72

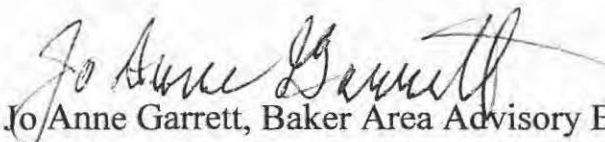
The North Snake Range includes Mt. Moriah Wilderness Area, which contains the vast Table inhabited by deer, eagles, and all the other animals, birds and vegetation for which the Wilderness designation was established. Mt. Moriah itself, at 12,070 feet, rises from the magnificent Table, averaging 11,000 feet or so.

The Moriah Wilderness is a spectacular and favorite recreation area for not only White Pine County residents, but also for hundreds of visitors from all over the Great Basin area, California, and the Intermountain West. Besides its unspoiled beauty, the animal and bird populations that inhabit this secluded and quiet place are unusually numerous and healthy. It is a benign landscape that must not be degraded by military air traffic, nor be littered by chaff or other materiel.

Furthermore, Great Basin National Park is relatively close to the proposed MOA. Having succeeded years ago, by means of the Rural Alliance for Military Accountability, in prohibiting supersonic flights in this area, we have lately been subjected to a number of nerve-shattering overflights. These have been protested, successfully so far, but we are reminded how totally incompatible are military training areas with the utter quiet of designated preserves and scenic areas—to say nothing of the many quiet towns and communities in the vicinity of the MOA.

A-73

Please find a different solution to managing this training issue!!


Jo Anne Garrett, Baker Area Advisory Board



Rural Alliance for Military Accountability

Thursday, October 30, 2008

Ms. Sheryl Parker

HQ ACC/A7PP

129 Andrews Street, Suite 122

Langley AFB, VA 23665-2769

Regarding: DRAFT EIS White Elk MOA

Dear Ms. Parker,

On behalf of RAMA, a non-profit organization, and conservation groups, including the Toiyabe Chapter of the Sierra Club, the Bristlecone Alliance, Western Watersheds Project and the Citizens Education Project, we are submitting these comments on the draft Environmental Impact Statement on the proposed White Elk Military Operations Area. The organizations are vitally concerned with the health of Nevada and Utah wildlands and communities which would be impacted by the proposed MOA.

Based on our review of these documents, we believe that the draft EIS does not meet the requirements of the National Environmental Policy Act. The document is deficient in defining and justifying the purpose and need for the proposed MOA. A full range of alternatives was not analyzed. The impacts analysis is inadequate and based on faulty science, especially in the use of "average" noise levels, rather than the actual sonic boom noise levels. The cumulative impacts analysis is also deficient. Our detailed comments on these NEPA violations follow.

R-1

R-2

R-3

The USAF is proposing that the rural residents of eastern Nevada be subjected to a Supersonic Operations Area that would be unacceptable over a large city and thus doing to a few what cannot be done to many.

R-4

- **“White Elk MOA (Blue) – Objective is to expand the Gandy MOA section of the UTTR to allow simultaneous testing and training during cruise missile testing. The status is preliminary with an aeronautical proposal at HQ ACCⁱ.”**

R-5

Cumulative Impacts

Why is the USAF piecemealing the impacts of the proposed Supersonic Operations Area, cruise missile testing and other activities in the region? What are the potential impacts associated with cruise missile testing? Since there are obvious conflicts with Hill AFB and the UTTR why was the option of relocating the F-16 squadron to a location where supersonic operations are already approved eliminated from alternative evaluation? The DOD already has a massive Supersonic Operation Area at the Utah Test and Training Range (UTTR) making it impossible to justify the proposed expansion.

R-6

R-7

The DRAFT EIS fails to address cumulative impacts resulting from “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions in the region Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

“White Pine County and the surrounding area have considerable natural-resource amenities that enhance the quality of life for those who live there. They also generate economic activity, jobs, and income by attracting recreationists and others. The natural resources of the Great Basin National Park, for example, have attracted 78,000 – 90,000 recreational visitors per year in the past decade, and their expenditures have generated economic activity in local communities. Some of the natural-resource amenities at risk are those that White Pine County’s Chamber of Commerce and its

Tourism and Recreation Board have identified as making the county “A Great Place to Visit” and “A Great Place to live”:

The DRAFT EIS fails to address the cumulative impacts of all military impacts, including Military Training Routes noise, toxic and fuel emissions, radar and electronic warfare sites etc.

R-8

- The DRAFT EIS states: Average training sorties for the F-16s without refueling last approximately 1 hour. Evaluation of the flying range (fuel capacity) of the F-16s reveals that training airspace beyond 150 nm from the base reduces effective training time below minimum levels of 30 minutes or more (Air Force 1993).
- The DRAFT EIS states: With the additional airspace, the F-16s would add Close Air Support, Defensive/Offensive Counter Air Attack, and Surface Attack Tactics to their missions.
- The DRAFT EIS states: Provide opportunities to engage ground-based threats and adversary aircraft in combat situation...

The F-16 has a payload which includes two 2,000-pound bombs, two AIM, 1,040-gallon external tanks and can be armed with a M-61A1 20mm multi-barrel cannon with 500 rounds; external stations can carry up to six air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods. ⁱⁱ Will aircraft utilizing the proposed SOA be carrying any of these systems? Are there any risks of inadvertent ordinance releases? Will there be and additional Electronic Warfare Sites or radar sites associated with the proposed action? Where are the current sites located? Will mobile Electronic Warfare equipment be utilized? If so what are the potential health and safety risks, including electromagnetic radiation, associated with these activities? Will lasers be utilized during the proposed training activities? If so, what class of lasers and what are the potential risks? For example, in 2004 there were four instances in which 20mm rounds fired from F-16s during practice strafing runs struck outside Air Force gunnery ranges. In one high profile case, 20mm rounds hit a New Jersey school four miles from their intended targetⁱⁱⁱ.

R-9

R-10

R-11

- The DRAFT EIS states: Portions of VR-1259, IR-234/235, and IR-293 are located under the Currie/Tippet ATCAA. Segments of IR-234/235 cross the central portion of the area from east to west with a lower altitude limit of the surface. For IR-293, the segments extend southwest to northeast across the area under the ATCAA; the floor altitude along this route is 100 feet AGL. VR-1259 transects the northern edge of the area with segments rated to 200 feet AGL. Portions of VR-1259, IR-234/235, and IR-293 are located under the Currie/Tippet ATCAA. Segments of IR-234/235 cross the central portion of the area from east to west with a lower altitude limit of the surface. For IR-293, the segments extend southwest to northeast across the area under the ATCAA; the floor altitude along this route is 100 feet AGL. VR-1259 transects the northern edge of the area with segments rated to 200 feet AGL.

The above mentioned routes , many of which a designated below 500 feet AGL clearly demonstrate the necessity for noise analysis which includes all military activities in the impacted region to assure that the all cumulative impacts are addressed.

R-12

Air Refueling Route

The DRAFT EIS while using the nebulous criteria of 150 nm for effective training criteria is proposing the creation of a new Air Refueling Route (AR) 659. We staunchly oppose the creation of AR 659 and believe that this proposed route demonstrates that the proposed Supersonic Operation Area does not meet the USAF criterion as mentioned above. If the proposed action did meet the 150nm criterion the USAF would have no need to create a refueling route over Nevada. Furthermore, the DRAFT EIS fails to address the increased environmental impacts associated with increased training times associated with AR 659. Refueled aircraft will obviously be utilizing the airspace for longer periods of time creating increased numbers of sonic booms and negative environmental impacts. The DRAFT EIS ignores these impacts. What emissions of fuel will occur with refueling activities? What is the potential risk of accidents while refueling?

R-13

R-14

R-15

R-16

Noise

- The DRAFT EIS states: Noise due to sonic booms (measured in CDNL) in the overlying Currie/Tippet ATCAA would generate noise at levels comparable to subsonic DNL of 55 dB; this level does not exceed the level identified by the USEPA as protective of public health. Supersonic noise would affect the area population as a whole; however, the noise would be short-term in duration and would not be expected to have an adverse affect on human health and the environment.

Why has the department of defense not followed the recommendations of chaba in describing high-intensity impulsive sounds, such as sonic booms and explosions, in terms of c-weighted sound exposure level yet has done so in other NEPA documentation?

R-17

The following are direct quotes from the Draft EA:

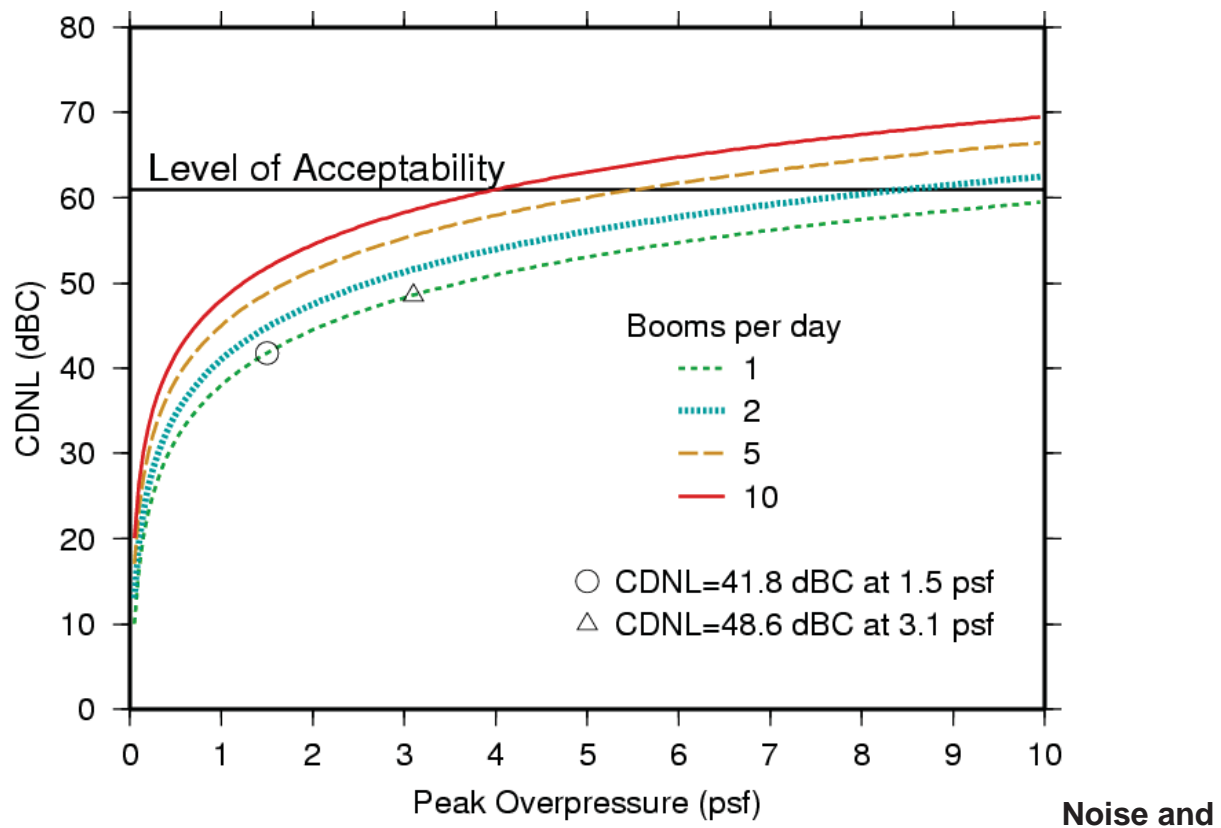
PROJECT RELATED SONIC BOOMS

- The DEA states: As a flight vehicle moves through the air at supersonic speeds, the air in front is displaced to make room for the vehicle and then returns once the vehicle passes. This causes what is called a sonic boom. In subsonic flight, the pressure wave (which travels at the speed of sound) precedes the vehicle and displaces the air around the vehicle. When a vehicle's speed reaches the speed of sound, it is said to be traveling at
- The DEA states: Mach 1. The pressure wave cannot travel faster than the speed of sound or precede the aircraft at Mach 1, and the parting process is abrupt, creating a noise. A shock wave is formed initially at the front of the vehicle when the air is displaced around it and lastly at the rear when a trailing shock wave occurs as the air recompresses to fill the void after passage of the vehicle. A sonic boom differs from most other sounds because it is impulsive (similar to a double gunshot), there is no warning of its impending occurrence, and the magnitude of the peak levels is usually higher. Sonic booms are typically measured in C-weighted decibels or by changes in air pressure, called peak

R-18

overpressure; measured in pounds per square foot. Exposure to sonic booms is typically measured as a C-Weighted day-night level (CDNL), on a C-weighted scale, rather than as a DNL, on an A-weighted scale. Correlation between DNL and CDNL has been established based on community reaction to impulsive sounds (CHABA 1981).

- The DEA states: The DOD has followed the recommendations of CHABA in describing high-intensity impulsive sounds, such as sonic booms and explosions, in terms of C-weighted sound exposure level.



Sonic Boom Measurement Relationships

- The DEA states: Table B-3 shows the relationship between peak overpressure values used to measure the intensity of sonic booms and other impulse related noise in relation to values used to measure non-impulse noise. The projected maximum values for project-related noise (shaded in Table B-3) were calculated as shown in two noise and sonic boom studies (95ABW 2003, 2005).

**Relationship Between Sonic Boom Overpressure in
Pounds per Square Foot (psf) and Other Noise Metrics in Decibels (dB)**

Peak Overpressure (psf)	CSEL (dB)	Peak SPL (dB)	SEL (dB)
0.2	85.4	113.6	75.9
0.5	94.0	121.6	84.5
1.0	100.4	127.6	90.9
2.0	106.9	133.6	97.4
3.0	110.7	137.1	101.2
4.0	113.4	139.6	103.9
5.0	115.5	141.6	106.0
6.0	117.2	143.1	107.7
8.0	119.9	145.6	110.4
10.0	121.9	147.6	112.4
12.0	123.6	149.2	114.1
14.0	125.1	150.5	115.6
18.0	127.4	152.7	117.9
22.0	129.3	154.4	119.8
26.0	130.9	155.9	121.4
30.0	132.2	157.1	122.7

Source: 95ABW and AFFTC 2005b

We note that the sonic booms expected in the region will exceed the threshold of pain. The human threshold of hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB. As described in the DRAFT EIS peak Overpressure could reach 149.2 dB.

R-19

- The DEA states: The F-16s would conduct a maximum of 1,840 supersonic events in the ATCAA each year. Supersonic events would last about 2 to 3 minutes. Not all F-16 missions would involve supersonic flight. Similarly, not all transient aircraft would employ supersonic flight; a total of 83 annual supersonic events are proposed for the transient aircraft.

This finding is misleading to a fault and does not fully portray what a sonic boom is. An aircraft does not simply accelerate to Mach 1, create one loud bang when it breaks the sound barrier, and then proceed quietly on its way. Instead a Mach 1+ flight continuously breaks the sound barrier, creating shock waves all along the ground over which it passes. Exactly, what acreage of land is projected to be impacted under the

R-20

R-21

worst case scenario? The DRAFT EIS fails to adequately address the potential impacts from carpet booms which spreads broadly across the surface beneath the aircraft. In general, the carpet will be one mile wide for every thousand feet of altitude of the aircraft. Therefore, a carpet boom generated at 50,000 feet above ground level will be approximately 50 miles wide.

R-22

- The DRAFT EIS states: A number of factors not related to noise have been identified that may influence the annoyance response of an individual. These factors include both physical and emotional variables. However, the effects of noise over a period of time depends on the total noise exposure over extended periods, so “cumulative” noise metrics are used to assess the impact of ongoing activities. Within this EIS, noise is described by the sound level (L), the Sound Exposure Level (SEL), Day-Night Average Sound Level (DNL), and Onset Rate-Adjusted Monthly Day-Night Average Sound Level (Ldnmr).

Noise analysis in the DRAFT EIS is faulty and does not address the peak overpressure and noise levels associated with an actually sonic boom or indeed a double sonic boom or focused boom.

R-23

- The DRAFT EIS states: The potential for noise to affect physiological health, such as the cardiovascular system, has been speculated; however, no unequivocal evidence exists to support such claims (Harris 1997).

The DRAFT EIS cherry picks noise analysis to fit their needs and ignores other findings, for example, Cantrell (1974) concluded that the results of human and animal experiments show that average or intrusive noise can act as a stress-provoking stimulus.

Prolonged stress is known to be a contributor to a number of health disorders. Kryter and Poza (1980) state, “It is more likely that noise-related general ill-health effects are due to the psychological annoyance from the noise interfering with normal everyday behavior, than it is from the noise eliciting, because of its intensity, reflexive response in the autonomic or other physiological systems of the body.” Psychological stresses may cause a physiological stress reaction that could result in impaired health.

R-24

- The DRAFT EIS states: Conclusions drawn from a review of health effect studies involving military low-altitude flight noise with its unusually high maximum levels and rapid rise in sound level have shown no increase in cardiovascular disease (Schwartz and Thompson 1993). Additionally, claims about overflight noise producing increased mortality rates and increases in cardiovascular death, adverse effects on the learning ability of middle and low aptitude students, aggravation of post-traumatic stress syndrome, increased stress, increase in admissions to mental hospitals, and adverse affects on pregnant women and the unborn fetus are similarly unsupported (Harris 1997).

All of the above mentioned claims pertain to the potential health effects for aircraft calculated with a time-average sound levels below 75 dB. This analyze is not appropriate for addressing the impacts of supersonic operation and the accompanying sonic booms. The DRAFT EIS fails to address the annoyance of impulsive signals and other environmental noises containing substantial low-frequency energy in terms of effective (duration-corrected) loudness level rather than commonplace ASEL or CSEL.^{iv}

R-25

R-26

The FAA has set 65 dB as the boundary for significant noise impacts? Why is the USAF utilizing the 75dB for analysis and not utilizing a DNL of 55 dB throughout the DRAFT EIS which is identified by USEPA as a level “requisite to protect the public health and welfare with an adequate margin of safety,” (USEPA 1974) in the entire DRAFT EIS? Is this because the USAF believes the health and welfare of White Pine County to be disposable? Why are there different health standards for the residents of eastern Nevada than those recommended by the EPA?

R-27

- The DRAFT EIS states: Sonic boom overpressures for this type of supersonic activity range from less than 1 psf to over 12 psf. However, the average peak overpressure is under 1psf with a small probability of booms exceeding 6 or 7psf.

The DRAFT EIS fails to address the worst case scenario of a sonic boom at 12psf and downplays the potential impacts with statements such as “This same phenomenon, referred to as “cutoff,” also acts to limit the width (area covered) of the sonic booms that reach the ground”. The DRAFT EIS fails to project impacts from the SUPERBOOM or

R-28

R-29

focused boom when an aircraft utilizes “cutoff” maneuvers. What are impacts of these boom variations from location to location within the impacted region? Can focused sonic booms have peak overpressures two to five times as large as a carpet boom? ^v

R-30

“The U.S. Standard Atmosphere for cutoff is Mach number is 1.15. This represents a speed 35% faster than typical subsonic civil cruise speeds of Mach 0.85 or less. The nominal Mach1.15 cutoff has, of course, been cited for decades. Two details are typically not pointed out. One is that the cutoff Mach number varies from location to location and time to time as the atmosphere varies. The second is that when cutoff is achieved there is a focused superboom at the cutoff altitude”.^{vi}

- The DRAFT EIS states: Subsonic noise levels would remain low and would not measurably increase annoyance to people.
- The DRAFT EIS states: The increase in supersonic noise could cause an increase in the number of complaints received and result in an increase in the number of people (an approximate change from 1 to 3.3 percent) highly annoyed by supersonic activities. However, while there is an increase in supersonic noise, no adverse impacts to hearing or health would occur.

What are these subsonic noise levels from all military activities in the region? What studies has the USAF completed in the region to prove this claim. Has the USAF received any noise complaints from the region?

R-31

R-32

R-33

The DRAFT EIS fails to provide information on the atmospheric temperature and wind profiles that may affect the way sonic booms are transmitted through the atmosphere.

R-34

Will strong temperature gradients and inversion layers contribute to the scattering of sonic booms? Will wind move and alter the shape of the footprint? The angle between the wind and aircraft flight path affect the shape and location of the footprint? What noise factors will change seasonally? What impact will mountain ranges have on noise impacts in the region?

R-35

R-36

R-37

R-38

- The DRAFT EIS states: The overpressures created are, in the vast majority of cases, well below those that would begin to cause physical injury or damage to

structures. In rare cases, a sonic boom could cause physical damage, as to a window, if the overpressure is of sufficient magnitude. Sonic booms may also cause startle effects in humans and animals.

Will low-frequency overpressure waves from sonic booms and blasts affect hollow objects such as the numerous caves found in the region of influence? How will sonic booms impact these caves, including but not limited to the caverns at Great Basin National Park. Could cavers be injured by sonic booms while conducting Speleological activities? How will sonic booms impact substrate vibration in these caves?

R-39

- The DRAFT EIS states: The potential for noise to affect physiological health, such as the cardiovascular system, has been speculated; however, no unequivocal evidence exists to support such claims (Harris 1997).

The key words are “unequivocal evidence”. There are many studies which document these effects and the DRAFT EIS eliminates these findings by using the criteria unequivocal of unequivocal and stating that there is no doubt regarding current scientific findings and that all research on noise having only one meaning or interpretation and leading to only one conclusion. The conclusion that the USAF wants!

R-40

For example the “The U.S. Department of the Navy prepared a programmatic Environmental Assessment (EA) for the continued use of non-explosive ordnance on the Vieques Inner Range. Following the preparation of the EA, it was learned that research conducted by the University of Puerto Rico, Ponce School of Medicine, suggested that Vieques fishermen and their families were experiencing symptoms associated with vibroacoustic disease (VAD) (U.S. Department of the Navy 2002). The study alleged that exposure to noise and sound waves of large pressure amplitudes within lower frequency bands, associated with Navy training activities--specifically, air-to-ground bombing or naval fire support--was related to a larger prevalence of heart anomalies within the Vieques fishermen and their families. The Ponce School of Medicine study compared the Vieques group with a group from Ponce Playa. A 1999 study conducted on Portuguese aircraft-manufacturing workers from a single factory

reported effects of jet aircraft noise exposure that involved a wide range of symptoms and disorders, including the cardiac issues on which the Ponce School of Medicine study focused.^{vii} How many night time sonic booms will occur under all training scenarios?

R-41

Structural Damage

The DRAFT EIS fails to provide an evaluation of the peak sound pressures which will be impinging on the structures in the region to determine the possibility of damage. In general, with peak sound levels above 130 dB, there is the possibility of the excitation of structural component resonances. At what frequencies (such as 30 hertz for window breakage) is there more concern than other frequencies?

R-42

R-43

- The DRAFT EIS states: For the proposed action, an average of 10 sonic booms would occur per day throughout the entire affected airspace resulting in an average of one every two days at any one location. The effect of this level of noise vibration is negligible on historic structures would be no more of an effect than strong winds, which occur regularly throughout the area.

The DRAFT EIS also fails to address the worst case analysis of the effects of aircraft noise and sonic booms on structures due to the inappropriate and inadequate noise analysis. For example the report NOISE AND SONIC BOOM IMPACT TECHNOLOGY, Effects of Aircraft Noise and Sonic Booms on Structures: An Assessment of the Current State-of-Knowledge, Brooks Air Force Base, TX found:

R-44

1. In 1988 Haber and Nakaki completed a study to determine the possible damage to structures and artifact based on the nominal pounds per square foot peak overpressure of a sonic boom. Table B-4 describes the possible effects for the level of sonic booms anticipated by the Proposed Action or Alternatives for this project.

Possible Damage to Structures from Sonic Booms

Sonic Boom Peak Overpressure Nominal (psf)	Item Affected	Type of Damage
Less than 0.5	None.	
0.5-2 (Category 1)	Cracks in plaster	Fine; extension of existing; more in ceilings; over door frames; between some plaster boards.
	Cracks in glass	Rarely shattered; either partial or extension of existing.
	Damage to roof	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
	Damage to outside walls	Existing cracks in stucco extended.
	Bric-a-brac	Those items carefully balanced or on edges can fall; fine glass, e.g., large goblets.
	Other	Dust falls in chimneys.
2-4 (Category 1)	Glass, plaster, roof tiles, ceilings	Failures show which would have been difficult to forecast in terms of their existing localized condition. Nominally in good condition.

Note: psf = pounds per square foot

Source: Haber and Nakaki 1988.

SONIC BOOM PEAK OVERPRESSURE NOMINAL	ITEMS AFFECTED	SUPPORTING REMARKS
4 - 10 psf	<u>Glass</u>	Regular failures within a population of well-installed glass; industrial as well as domestic; green houses; ships; oil rigs.
	<u>Plaster</u>	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured or very old plaster.
	<u>Roofs</u>	High probability rate of failure in nominally good slate, slurry-wash; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
	<u>Walls</u> (outside)	Old, free-standing walls in fairly good condition can collapse.
	(inside)	'party' walls known to move at 10 psf.
Greater than 10 psf	<u>Glass</u>	Some good glass will fail regularly to sonic booms from the same direction. Glass with existing faults could shatter and fly. Large window frames move.

Table 2-1 Failure Patterns in Conventional Buildings (Continued)

SONIC BOOM PEAK OVERPRESSURE NOMINAL	ITEMS AFFECTED		SUPPORTING REMARKS
Greater than 10 psf (continued)	<u>Plaster</u>	Most plaster affected.	
	<u>Ceilings</u>	Plaster boards displaced and nail popping.	Large ceiling movements especially in bungalows.
	<u>Roofs</u>	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gable-end and wall-plate cracks; Domestic chimneys - dislodgement if not in good condition.	- Chimneys are not easily affected because they don't couple well with sonic boom characteristics.
	<u>Walls</u>	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.	Mainly due to room acoustic coupling.
	<u>Bric-a-brac</u>	Some nominally secure items can fall, e.g., pictures; especially if fixed to party walls.	

- As shown in the *Final Programmatic Environmental Impact Statement for Horizontal Launch and Reentry of Reentry Vehicles* released by the Federal Aviation Administration (FAA) in 2005, sonic booms with intensity up to 0.5 psf would result in no items being affected. Sonic booms with intensities of 0.5 to 2.0 psf could affect pre-existing cracks in plaster resulting in fine cracks, extensions of existing cracks over door frames, or cracks between some plaster boards. Pre-existing cracks in glass are rarely shattered; damage could result in partial cracks and extensions to existing cracks. Damage to already damaged roofs could result in slippage of existing loose tiles/slates and sometimes could create new cracks at nail holes in old slates. Existing cracks in stucco on outside walls could be extended. Bric a-brac items, large goblets, or fine glass carefully balanced or on the edge of shelves could fall. Dust in chimneys could fall. The actual

occurrence of damage depends upon a number of variables; most with intensity of 2.0 psf and below do not create any significant impacts on the environment”.

- “Normally, the components of a structure that are most sensitive to airborne noise are windows and, infrequently, plastered walls and ceilings. An evaluation of the potential peak sound pressures impinging on the structure is normally sufficient to determine the possibility of damage. In general, at sound levels with peak sound pressure above 130 dB (psf above 1.5, structural components could be affected”.
- “Certain frequencies may be of more concern than others. For example, a frequency of 30 Hz can cause window breakage. This frequency is not in the general range of aircraft, but is in the range corresponding to the rotor frequency of helicopters (AFFTC 2001). However, sounds lasting more than 1 second above a sound level of 130 dB are potentially more damaging to structures (National Research Council/National Academy of Sciences 1977). Because the structural components of historical buildings and other historical sites could be more fragile than newer construction, the effects of aircraft noise on these sites could be more severe than on newer, modern structures. There are few scientific studies of such effects to provide guidance for their assessment. If a sonic boom with intensity greater than 2.0 psf were to occur over the structures, one could reasonably assume damage.”

Criteria

- The DRAFT EIS states: The existing UTTR is the only airspace which fulfills Criterion 2 and must, therefore, form the foundation on which to build any proposed action or alternative with the exception of its southern portion, all of UTTR lies within 150 NM of Hill AFB.
- The DRAFT EIS states: The 388 FW would also continue to use remote airspace complexes like NTTR occasionally. This remote training airspace receives use by thousands of aircraft from other bases (Air Force 1999). The 388 FW aircraft

account for a minimal proportion of total training activities. For this reason, these remote airspace units receive no further analysis in this EIS.

The UTTR is huge and is the largest contiguous overland block of supersonic authorized airspace in the continental United States. The range is larger than Rhode Island with over 12,574 square miles of airspace. That means that almost the entire northwestern portion of Utah is reserved for military training^{viii}. Hill Air Force Base already has a Supersonic Operations Area. Why do you need more? ^{ix}The criterion used to define alternatives in the DRAFT EIS is self fulfilling and an inadequate basis to determine alternative training areas for evaluation. For example moving the aircraft to another base that currently has a SOA was not examined. The F-16 is assuredly able to fly more than one hour and to state otherwise is an invalid attempt to justify the proposed action. **“In an air combat role, the F-16's maneuverability and combat radius (distance it can fly to enter air combat, stay, fight and return) exceed that of all potential threat fighter aircraft. It can locate targets in all weather conditions and detect low flying aircraft in radar ground clutter. In an air-to-surface role, the F-16 can fly more than 500 miles (860 kilometers), deliver its weapons with superior accuracy, defend itself against enemy aircraft, and return to its starting point”.**^x

- Fuel Capacity: 7,000 pounds internal (3,175 kilograms); typical capacity, 12,000 pounds with two external tanks (5443 kilograms)
 Payload: Two 2,000-pound bombs, two AIM-9 and 1,040-gallon external tanks
 Speed: 1,500 mph (Mach 2 at altitude)
 Range: More than 2,002 miles ferry range (1,740 nautical miles)
 Ceiling: Above 50,000 feet (15 kilometers)
 Armament: One M-61A1 20mm multibarrel cannon with 500 rounds; external stations can carry up to six air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods.^{xi}

Computer simulation is a standard of the flight industry that helps reduce the number of flight tests and associated emissions and sonic booms. Supersonic flight simulation was

inadequately addressed in the DRAFT EIS? Are their flight simulators that could be utilized as an alternative to the proposed action?

R-49

There are two Supersonic Operation Areas currently in use in Nevada that do not train over communities. We object to any further designation of supersonic flight activities in Nevada or Utah and believe the Air Force has adequate Special Use Airspace in the southwest to meet all training goals. The DRAFT EIS fails analyze any of these alternatives.

R-50

Furthermore, we believe the Air Force is pursuing a “Bad Neighbor Policy” by proposing detrimental supersonic operations over the community of McGill, Cherry Creek, Lages Station, Callao, Trout Creek, Partoon and Currie. There are many school children and seniors residing in these quiet communities. Does the USAF plan to buy out the residents of this community as the Navy did in Dixie Valley? Why does the DRAFT EIS fail to recognize that commercial supersonic aircraft have been outlawed from flying over the continental USA but the USAF believes they should not abide by the same humanitarian standards.

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R-53

Additionally, the community of Ely is so close to the boundary of the proposed SOA we can assume that any spill out of supersonic operations would impact the community, causing both health impacts to residents and structural damage to historic sites located in the community. Will the USAF be mitigating impacts by sound proofing all public and private buildings in the impacted region? What are the vibration levels for the worst case analysis of all boom amplitudes? To limit the overall environmental impact on all impacted communities, supersonic operations from Hill AFB must be prohibited within 5 miles of all communities as a proper mitigation measure.

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- The DRAFT EIS states: The primary factor driving the need for the proposed action is the 388 FW’s lack of reliable and consistent access to UTTR airspace. Application of the alternative identification methodology defined the proposed White Elk MOA. No other airspace or location within or near UTTR met the criteria and fulfilled the training requirements. This EIS analyzes the proposed White Elk MOA in addition to the no-action alternative.

- The DRAFT EIS states: Application of the alternative identification methodology resulted in the elimination of all existing Airspace except UTTR.

The DRAFT EIS fails to meet CEQ guidelines for the implementation of NEPA. By eliminating all other viable alternatives to the proposed action. Therefore, we believe the NO-Action Alternative must be implemented. All alternatives, including currently designated SOA in the western USA and the transfer of the F-16 to other existing bases must be fully examined prior to expanding supersonic operations in Nevada.

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R-59

- The DRAFT EIS states: In addition, cruise missile testing and other tests use UTTR also, accounting for operations over 33 weeks per year.

Our research has found that Hill AFB has received funding for projects not addressed in the DRAFT EIS such as:

- **Submarine-Launched Intermediate Range Ballistic Missile (S-LIRBM)**
\$12 million: Operations in Iraq and Afghanistan demonstrated the need for a sea-based, intermediate-range, precision-strike capability against time-sensitive targets. This funding will assist Ogden-based ATK-Thiokol in the motor design and testing for the S-LIRBM.
- **Supersonic Cruise Missile Engine Development**
\$10 million: These funds will be used for research and development of an engine for the supersonic cruise missile.^{xii}

The Environmental Assessment for Flight Test to the Edge of Space, DACA05-01-D-0005, Draft, September 2008 found that:

- “Impacts on airspace and air safety would be minimized by coordinating flights times so that high- speed vehicle test flights would occur at other than peak periods and along flight paths that would minimize scheduling conflicts to the maximum extent possible.”

Hill Air Force Base has been utilizing this airspace for decades with great success, therefore the expansion of supersonic operations into Nevada is unnecessary and an attempt by Hill AFB to create their own training sandbox using a self fulfilling criterion to

R-60

justify a new Supersonic Operations Area in Nevada. For example, the DRAFT EIS notes that cruise missile testing closes the range for days. Poor planning and coordination on the part of the Air Force cannot be used to justify the proposed action. Please explain why when cruise missile testing is done elsewhere the range may be closed for a couple of hours but certainly not for a whole week.

R-61

- **Sortie-Operations.** Under the proposed action, the primary users of the White Elk MOA and Currie/Tippet ATCAA would be the F-16s from the 388 FW. In total, the 388 FW would conduct 9,200 sortie-operations annually in the combined MOA/ATCAA airspace; transient (not based at Hill AFB) aircraft would use the combined airspace, including F-15s, F-22s, A-10s, and KC-135s and conduct 390 annual sortie-operations. The Air Force anticipates that the 388 FW would schedule the MOA and ATCAA together so each sortie-operation would use both airspace units. With the additional airspace, the F-16s would add Close Air Support, Defensive/Offensive Counter Air Attack, and Surface Attack Tactics to their missions. Sortie-operations in the remainder of UTTR and sorties out of Hill AFB would remain unchanged.

The DRAFT EIS fails to identify where the transient aircraft are coming from? Are these aircraft traveling more than 150 miles to sonic boom Nevadans? Will NATO aircraft be training due to restrictions in their own countries, such as Germany and Italy?

R-62

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- The DRAFT EIS states: **Authorization of Supersonic Flight.** To train with the full capabilities of the aircraft, the F-16s would employ supersonic flight. Under the proposed action, supersonic operations would be authorized for all capable aircraft in the Currie/Tippet ATCAA above 18,000 feet MSL. The F-16s would conduct a maximum of 1,840 supersonic events in the ATCAA each year. Supersonic events would last about 2 to 3 minutes. Not all F-16 missions would involve supersonic flight. Similarly, not all transient aircraft would employ supersonic flight; a total of 83 annual supersonic events are proposed for the transient aircraft.

- THE DRAFT EIS states: The introduction of sonic booms from supersonic activity would be noticed and will be intrusive with nearly 2, 000 supersonic events projected.

Under the worst case scenario how much land would be impacted by a 3 minute supersonic event? Does a supersonic aircraft usually produce two sonic booms, one from the aircraft's nose and the other from its tail, resulting in a double thump?

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- The DRAFT EIS states: The 388 FW normally conducts operations about 260 days per year; fuel allocations, weather, and crew rest account for the remaining 104 days. Operations predominantly occur during the weekdays, although weekend activities could occur. On average, the 388 FW and transients would perform approximately 37 sortie-operations per flying day in the MOA and ATCAA.

The DRAFT EIS again averages the potential impacts over a full year and fails to provide a worst case scenario of the number of sonic booms per day and the worst case analysis for noise impacts.

R-66

Depleted Uranium (DU)

- The DRAFT EIS states: Permit air-to-ground mission (e.g., CAS, anti-armor) against a variety of targets including time sensitive and urban targets.

Most anti armor weapons are made with Depleted Uranium or Tungsten. Will the A-10s being carrying weapons made of Depleted Uranium or Tungsten? If so, the DRAFT EIS fails to address this issue. Where are these urban targets? What are the potential impacts of a plane crash and burning Depleted Uranium or Tungsten? In a crash scenario would burned DU form particles of inhalable size? What are the health impacts from inhaling or ingesting DU?

R-67

Civilian Aircraft

- The DRAFT EIS states: Nonparticipating civil and military aircraft flying under visual flight rules (VFR) may transit an active MOA by employing see-and-avoid procedures.
- The DRAFT EIS states: Since MOA operations are considered nonhazardous, VFR pilots may fly through a MOA when it is in use while exercising see-and-avoid clearance precautions.

This statement goes to the very heart of the proposed actions. This is not a proposal for a simple MOA. This is a proposal for a SUPERSONIC OPERATIONS AREA! In fact the title of the DRAFT EIS and all other notifications, documents, etc. must be redone to truthfully portray the proposed actions. Military Operations in a SOA are hazardous!

R-68

The DRAFT EIS fails to adequately address the potential impacts to civilian aircraft in an active supersonic training scenario. What are the increasing risks to pilots in a see-and-avoid scenario when F-16 aircraft are flying at MACH + Speeds? Also the potential cost impacts to prudent civilian pilots or commercial aircraft who will circumvent an active SOA utilizing chaff and flares, must be adequately addressed in the DRAFT EIS. In fact we believe these activities are ultra hazardous and should be conducted only in Restricted Airspace since a Supersonic Operation Area is not depicted on aeronautical maps.

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Again, this is not a proposal for a simple MOA! This is a proposal for a Supersonic Operations Area (SOA)! Additionally, since a Supersonic Operation Area will is not found on any sectional or air chart, and the ability to see and avoid a mid air collision diminishes in proportion to the rate of closure between two aircraft NEPA documentation must analyze possible closure rates for aircraft flying in the proposed airspace? The DRAFT EIS fails to address the reality when an aircraft is flying at or near supersonic speeds, any ability to see and avoid drop to near zero.^{xiii}

R-72

R-73

Chaff and Flares

- The DRAFT EIS states: **Under the proposed action, the F-16s would annually use 40,700 bundles of RR-188 chaff and 31,630 M-206 defensive flares within the White Elk MOA and the overlying Currie/Tippet ATCAA.**
- The DRAFT EIS states: Self-protection flares are primarily mixtures of magnesium and Teflon (polytetrafluorethylene) molded into rectangular shapes.

The EPA has said that exposure to even low levels of perfluorooctanoic acid and its salts, known as PFOA, or C-8, could pose “a potential risk of developmental and other adverse effects.”^{xiv} What are the potential long turn impacts of Teflon and the environment from the dispersal of Teflon by the USAF?

R-74

- The DRAFT EIS states: Chaff and flare deployment on UTTR would continue to be governed by a series of regulations based on safety and environmental considerations and limitations. These regulations establish procedures governing the use of chaff and flares over ranges, other government-owned and controlled lands, and nongovernment-owned or controlled areas. Air Combat Command has set standard minimum-release altitudes (ACC Supplement to AFI 11-214) for flares over government-owned and controlled lands.
- The DRAFT EIS states: These standards, which vary from 400 to 900 feet AGL according to aircraft type, are designed to allow the flares to burn out completely by at least 100 feet above the ground (Air Force 2003).
- The DRAFT EIS states: A partially burned flare could ignite a fire potentially affecting soil and water properties; however, an ACC supplement to AFI 11-214 (30 May 1997) prescribes a minimum flare employment altitude of 2,000 feet AGL over non-government owned or controlled property (Air Force 1997)'

These are contradictory statements. Exactly what is proposed? We adamantly object to the proposed action which would allow flares to be dropped at over private and public lands and wilderness. Accidents can and do happen with flares despite restrictions. Noting the extremely dry conditions or red flag conditions often found in eastern

R-75

Nevada, what is the potential that a fire from a flare during normal training or an inadvertent firing of a flare such as occurred in Las Vegas on October 18, 2006^{xv} could occur?

R-76

Has the USAF eliminated all chaff containing lead? Will chaff containing lead be utilized? What are the potential hazards?

R-77

- The DRAFT EIS states: Flares are designed to burn out completely within 325 feet after release. After activation, the end cap of the flare falls to the ground. The end cap weighs approximately 0.16 ounces, creating the potential to generate an impact momentum of 0.010 pound-seconds (Air Force 1997). If an end cap struck a person on the ground, the momentum generated would be far below that required to cause serious injury. Therefore, safety risks related to flare debris would be negligible under the proposed action.

Is the USAF claiming that a person or animal struck by an end cap that has fallen from 18,000 feet MSL would not be seriously injured? What exactly is the worst case analysis if a person or animal were to be struck? Could death occur?

R-78

- The DRAFT EIS states: Dud flares may be mishandled if discovered on non-DoD lands by the uninformed public.

As noted in the DRAFT EIS, Hill AFB would initiate a public information campaign to inform the public about the hazards of dud flare discovery and the procedures for reporting such findings. Safety risks from dud flares, therefore, would be minimized given these informational efforts and the low probability of such occurrences if the proposed action were implemented.

These findings assume that all habitats impacted by the proposed actions would be informed, including small children and the many visitors, recreationalists and hunters who utilize the region. Risks to uninformed residents and visitors must be calculated.

R-79

Therefore the above conclusions and findings are faulty and the risks cannot be ignored.

- The DRAFT EIS states: To reduce the risk of fires, F-16 pilots from Hill AFB would not deploy flares under high fire conditions as defined by the National Weather Service using the National Fire Danger Rating System.

Will the Air Force halt deployment of flares during Elk hunting season, hang gliding events or other county events?

R-80

Who is responsible for damages caused from a fires from flares such as occurred in New Jersey in May 2007: "Crews worry about wind spreading N.J. fire; National Guard says military flare likely cause"

R-81



Firefighters in New Jersey kept an anxious eye on the weather Wednesday as they battled a massive wildfire that had consumed more than 20 square miles of brush and pine forest after a military jet dropped a flare on a bombing range. The blaze sent walls of flames 80 to 100 feet high racing toward senior citizen communities, where elderly residents grabbed their pets and ran.

"It was as close to hell on Earth as you'll ever experience in your life," said Bert Plante, a spokesman for the New Jersey Forest Fire Service. He spoke in a trailer park where two homes were incinerated and others were damaged. ^{xvi}

What is the potential for dud flare to cause personal injury such as occurred In October 2008 and reported in the Sydney Morning Herald?

R-82

“A discarded army flare started a bushfire on the NSW south coast but the Defense Department does not know where the flare came from. The trip flare was found on Saturday by two women riding their horses through a state forest near Batemans Bay and one of the women, Brenda-Lee Tonna, picked it up thinking it was a child's toy. But within seconds the flare exploded, burning Ms Tonna's hand.^{xvii}”

Another undetonated military flare was found Sunday on the beach in Ocean City, Maryland. The flare, which was attached to a parachute, washed up near 7th Street two days after a large piece of ammunition was found on the shore in Bethany Beach on Friday.^{xviii}

Flares have been responsible for many fires the "Seal" fire on September 10, 1996 was started at Naval Air Station Fallon during training. The Meadow Valley fire in 1993 burned 21,686 acres at the Nellis Range Complex in southern Nevada and costs \$300,000 to suppress.

What is the potential for flares to start fires that can spread and have significant adverse impacts on the Nevada's environment and budget? The DRAFT EIS fails to adequately address impacts of flare and chaff use to air quality, water quality, wildlife resources, cattle grazing, mining and wilderness. What are the significant secondary effects which a flare fire would cause on personnel safety, soil, water resources, biological resources, land use, visual resources, and cultural resources? The DRAFT EIS fails to adequately address the issue of the potential for dud flares and falling debris to pose a public safety risks, especially to the communities of McGill, Cherry Creek, Lages Station, Callao, Trout Creek, Partoon and Currie. There is also the risk associated with untrained people finding dud flares dropped over land that is not controlled by the Department of Defense.^{xix} What would happen to a small child from the community of McGill, Cherry Creek, Lages Station, Callao, Trout Creek, Partoon and Currie if they found and mishandled a dud flare? The DRAFT EIS must present a worst case scenario from flare use over non DOD controlled lands. Is it legal to drop chaff and flares over non-DOD

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controlled lands? The DRAFT EIS fails to provide a regional and national analysis of the amount of acreage burned by flares during the past 20 years and the acreage protected to burn in future years.

R-94

What methodologies were utilized in the DRAFT EIS to justify flare fires risks for lands impacted by the proposed SOA? What is the predicted risk that a fire will start and spread over a 5 year, 10 year, and 25 years time span? What are the meteorological conditions and the flammability of various types of vegetation found in the region year round? The DRAFT EIS fails to provide analysis conducted on a site-specific basis.

R-95

Impulse cartridges and initiators used with some flares contain chromium and, in some cases, lead, which are hazardous air pollutants under the Clean Air Act. What are the potential health risks to local communities from these materials, including seniors, children and the ill? Are there small, confined freshwater habitats, such as Bassett Lake, that would be impacted by these pollutants? As a mitigation measure the USAF must provide White Pine County an Air Monitoring system to assure full compliance the Clean Air and Clean Water Acts.

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Flare debris is similar to chaff debris, and litter is a major concern in certain pristine areas, wilderness and public lands. The DRAFT EIS does not adequately address these public resources and the incompatible proposal to drop chaff and flares over designated wilderness in Nevada. Is it legal to litter public lands? We staunchly oppose all proposed chaff and flare dispersal over communities, wilderness, State Parks, or other recreational areas as proposed. The DRAFT EIS fails to adequately address impacts from flare use to Native Americans traditional resources. What traditional resources could be adversely affected by flare caused fires?

R-99

R-100

R-101

What are the ignition sources found in the region? Will a pinion pine burn faster than sagebrush? Is there an abundance of cheatgrass in the region? Can a flare fire occur in relatively low fire hazard conditions if ignition sources are present? What is the release altitude for all potentially utilized flares to ensure a complete burn-out?

R-102

R-103

Data gaps exist regarding the potential risks of chaff. We believe it is unethical to disperse chaff over eastern Nevada until adequate independent analysis determines the long-term risk from exposure of inhaled fibers.	R-104
The DRAFT EIS fails to provide resuspension rates of uncoated and coated fibers.	R-105
Over time can chaff be broken inhalable particles which could be resuspended by wind or other activities such as horseback riding? What are the weathering rates and chemical fate of metal coatings in soils, fresh water, and wetlands? The DRAFT EIS fails to provide a comprehensive analysis of metal toxicity values for humans, animals, and important fresh water organisms. The DRAFT EIS fails to adequately examine of the respirability and ingestion of fibrous particles in avian species and aquatic species.	R-106
What is the pathology of inhaled fibers? Does jet exhaust have an impact on chaff?	R-107
	R-108
	R-109
	R-110
The DRAFT EIS fails to adequately address chaff accumulation for a 5, 10 and 25 year time frame on water bodies and the effects on animals using those water bodies. The DRAFT EIS does not provide bioassay analysis to assess the toxicity of chaff to aquatic organisms. The DRAFT EIS fails to address the ability of surface or bottom feeding waterfowl and other aquatic species to process ingested chaff. What are the effects to wildlife effects from the inhalation from chaff particles? Chaff looks and feels like fiberglass, what types of skin irritations can be expected?	R-111
	R-112
	R-113
	R-114
	R-115
The effects of releases of chaff, dud flares, and flare ash on the environmental depend on a variety of factors, including the quantity of material released, the propensity of these materials to leach toxic chemicals under given conditions, and the sensitivity of receiving environments to contaminants of concern. The DRAFT EIS fails to provide adequate analysis of these impacts.	R-116
Use of chaff over or immediately adjacent to highly sensitive areas such as Wilderness Areas, Wild and Scenic Rivers, National Parks and Monuments, and other pristine natural areas is not incompatible with the land use management objectives for those areas and must not be permitted The DRAFT EIS fails to address the potential for chemical effects from chaff and/or flares on archaeological or architectural resources. .	R-117
	R-118

- The DRAFT EIS states: The constituents of chaff occur naturally in the environment. Aluminum, the major component of the chaff fiber coating is one of the most abundant metals in the earth's crust, air, and water. Silica, the primary component of the glass chaff fibers, is highly prevalent in soils, rocks, and sand. In extremely high levels (e.g., kilograms) accumulated chaff fibers would have the potential to generate adverse effects to these resources (Air Force 1997).

The DRAFT EIS does not mention the use of biodegradable chaff under the proposed action. Why? The processing of aluminum and silica into chaff forms a man made material that is hazardous and not naturally found in nature.

R-119

The International Agency for Research on Cancer (IARC) has found that Exposure to silica can cause silicosis, a fibrosis (scarring) of the lungs that can be progressive and may lead to death. Inhalation is considered carcinogenic to humans, particularly when this material is composed of particles of respirable size, as defined by the current NIOSH method.

Aluminum is also hazardous and associated with fragility fractures have increased epidemically. Especially patients with senile dementia (including Alzheimer's disease) have a greatly increased risk of fragility fractures. Aluminum inhibits bone mineralization; the greater the aluminum exposure, the higher the risk of an early fracture. Aluminum is neurotoxin and may, in addition to genetic factors, play a role in the development of Alzheimer's disease by contributing to the formation of the characteristic beta-amyloid and neurofibrillary tangles. Thus, a common denominator between Alzheimer's disease and bone fragility may be chronic low-grade aluminum intoxication.^{xx}

Will chaff increase the potential illnesses such as Alzheimer's disease? How do chaff fibers differ from more spherical dust particles in their aerodynamic properties?

R-120

R-121

- The DRAFT EIS states: Wildlife do not use chaff fibers for food or nesting material and chaff has not been proven to be toxic to animals if ingested.

What long term studies have been done to determine the viability of these findings?

R-122

- The DRAFT EIS states: Chaff fragments do not display asbestos-like characteristics and do not pose asbestos-like health risks.

Nonsense! Chaff looks and feels like asbestos and it breaks into small particles which can be inhaled or ingested. From personal experience in handling chaff we also know that chaff causes skin irritation. This is a false statement and must be corrected. This is a blatant attempt by the USAF to shelve the impacts of chaff dispersal over eastern Nevada. Furthermore, the components of chaff, both aluminum and silica pose serious health risks if inhaled or ingested.

R-123

- The DRAFT EIS states: The number of degraded or fragmented particles is insufficient to result in disease (Spargo 1999). Inhalation or ingestion of chaff filaments or fragments with adverse effects to wildlife, livestock, or humans is unlikely.
- The DRAFT EIS states: Based on the total number of devices used, the Air Force estimates that chaff concentrations would be estimated to be approximately 2.29 grams (0.08 ounce) per acre per year.

How many fibers is this? Since the use of biodegradable chaff is not being proposed and chaff is certainly not biodegradable the DRAFT EIS fails to address the long term cumulative impacts associated with chaff dispersal over an extended period of time.

R-124

- The DRAFT EIS states: On rare occasions, the chaff may not wholly separate and may fall to earth as a clump.

The DRAFT EIS not adequately provide analysis of the probability. How often will this occur? The BLM has documented clumps of chaff in central Nevada.

R-125

Air Quality

- The DRAFT EIS states: ATCAA represent the only potential impact to soils and water resources from the proposed action.

How will the USAF comply with the Carbon Neutral Program in accordance with EO 13423 and the Kyoto Protocols to offset carbon dioxide emissions?

R-126

If JP-4 or JP-8 Jet Fuel consists of a complex mixture of hydrocarbons, including poly aromatic hydrocarbons (PAHs), naphthalene and benzene (a known carcinogen), how will the increase in jet fuel emissions impact public health? Will the Air Force be providing our local air pollution districts funds to start testing the air for barium (salts), aluminum (oxides), perchlorate, cadmium, manganese, magnesium, lead, iron, tungsten, and carcinogenic poly aromatic hydrocarbons like naphthalene and benzene?

R-127

Can inhaling JP-8 increase lung permeability, damage DNA of lung and liver cells, and thus cause cancer? How toxic is JP-8 to the immune system? Could repeated exposure increase the risk of autoimmune diseases and cancer? Will military aircraft disperse lingering contrails when struck by sunlight at certain angles, display color bars? What is the chemical structure causing this repeated prismatic color bar?

R-128

R-129

Hydrazine

- The DRAFT EIS states: Hydrazine is a highly volatile propellant that contains toxic elements. It is carried on the F-16 as part of the emergency power unit system, and when activated, the flow of hydrazine lasts approximately 15 minutes. When used for this purpose, hydrazine is completely consumed, and poses no safety hazard. In any crash that is severe enough to rupture the canister, it is most likely that fire will also be involved. In this case, the hydrazine will also burn and be completely decomposed. In the unlikely event that the hydrazine should be released, but not consumed by fire, impacts on soils and groundwater are likely to be of minor consequence.

What is the worst case analysis if emergency personnel were to be exposed to hydrazine in the case where the hydrazine had not burned? Is death a possibility?

R-130

Aircraft Crashes

- The DRAFT EIS states: Over time, all aircraft experience fewer mishaps than the initial introductory phase; thus, accident rates for F-16 aircraft within the White Elk MOA and ATCAAs would probably be less than that projected.

The F-16 aircraft is an aging aircraft which was delivered in January 1979 to the 388th Tactical Fighter Wing at Hill Air Force Base, Utah. Logically all mechanical and electrical items deteriorate with age and the F-16 aircraft is no exception to the rule.

The DRAFT EIS fails to address the increasing potential accident and mishap incidence expected to occur from the aging fleet of F-16s? Exactly how old are the planes stationed at Hill AFB? When the F-16 was developed and entered its service in 1979, it was expected that the F-16 would have an operation life expectancy until 1999.^[2]

R-131

However, after much speculation, the F-16 will not be phased out of service until 2010. Will the F-16 be phased out in the next couple of years?

R-132

Even relatively “young” aircraft like the F-16 (average age 9 years in 1998) are affected by age, skin corrosion, bulkhead cracks and landing gear wear are common. Without improvements, as of 2007 it was estimated that almost 90 percent of the fleet would exceed design limits on engines by 2010. High usage, increased stresses, and more weight than planned threatened to cut life expectancy in half. Significant unknowns exist about extending the life beyond 8,000 hours should that be necessary. If it became necessary to enable the newest F-16 aircraft to reach a 10,000 flying hour life, a program official estimated in 2007 an additional cost of \$2.2 billion for structural enhancements.

Accidents will happen, and even today the smartest of weapons can malfunction and veer off course. For instance, on eight occasions since 1997, the Advanced Cruise Missile has deviated from its intended target and crashed at various locations throughout the UTTR. In addition, three CALCM have crashed since 1995 on the range heightening this concern is the fact that new and experimental long-range systems will be tested in the region. We all know that during the initial testing of new missiles and self-guided munitions, errors occur and systems can stray far from their intended target.

What is the potential for any of these systems to utilize the proposed airspace? What are the potential environmental consequences?

R-133

Another truth, not fully addresses in the DRAFT EIS, is that over the past 20 years approximately 70 aircraft have crashed in Utah. The site of an aircraft crash can be quite large with wreckage found over a half a mile long site. Clearly, the potential is very high for a catastrophic accident in which an aircraft, or part of an aircraft, could crash into White Pine County or the Goshute Indian Reservation. What is the worst case scenario if a crash were to occur in any of the communities impacted by the proposal?

R-134

If these lands were to burn from a flare or crash what would the economic impact be? What are the economic impacts from decreased property values associated with the proposed SOA?

R-135

R-136

The Future

- The DRAFT EIS states: Use of UTTR airspace is expected to increase by 50 percent in the next 2 years due to demand for training and testing of weapons with large weapons footprints like JDAMs. (Air Force 2006a).

What exactly is this proposal for? Why is the USAF pushing this proposal at this time?

R-137

Will cruise missiles or ICBMs be utilizing this airspace? Are there Cruise Routes (CRs) associated with this proposal? Is the USAF piecemealing their activities at the expense of Nevadans? What is the connection of this proposal to the **Submarine-Launched**

R-138

R-139

Intermediate Range Ballistic Missile (S-LIRBM) and the **Supersonic Cruise Missile Engine Development \$10?** ^{xxi}Has NEPA documentation been prepared for these activities? What are the cumulative impacts on the region from these activities?

R-140

The Environmental Assessment for Flight Test to the Edge of Space, DACA05-01-D-0005, Draft, September 2008:

- “FAA and DOD regulations limit or prohibit flights with speeds above Mach 1 or higher over designated avoidance areas (Air Force Instruction 13-15 201 and FLIP AP/1B) to avoid noise and sonic boom related issues”.

Are there any designated noise avoidance areas in the region? Will Nevada communities and wilderness and other sensitive noise areas be designated?

R-141

Vultures

How will Air Force comply with all measures in the Migratory Bird Treaty Act? It is well known that vultures have caused many military aircraft crashes and that vultures may fly at altitudes over 10,000 feet. Are crash potentials from vultures increased in the warmer hours of the day when the vulture's activities include thermal gliding and foraging? How many vultures are found in the regions? Where are their roosts located? What is the potential for a crash involving a vulture?

R-142

Petroglyphs

The study by Sutherland *et al.* (1990) also shows that for a sonic boom of 2.0 psf or lower, the probability of damage to early American petroglyphs and caves is 0.011 (1 in 1,100). Since the proposed action will create sonic booms far exceeding this level what are the potential impacts under a worst case scenario? Has the BLM or other agencies documented impacts from noise and sonic booms on Native American artifacts? For example, we believe the BLM has documented damage to Grimes Point Petroglyph Park from NAS Fallon overflight activities. If a sonic boom with intensity greater than 2.0 psf were to occur over the artifacts, it could reasonably be assumed that damage could occur. What adjustments will be made to ensure no known artifacts were beneath the area projected to have sonic booms?

R-143

Wildlife and Domestic Animals

Are there Adult peregrine falcons in the region? Have falcons been known to step on eggs or young and occasionally kick eggs out of the nests during rapid exits following gunshots and other explosions?

R-144

- The DRAFT EIS states: The entire area under the MOA/ATCAA, including wilderness areas, would experience noise associated with sonic booms. Visitors to wilderness areas would be exposed to noise from sonic booms but the short duration of the boom and relative infrequency would still allow the visitors to experience the wilderness characteristics of the areas. The Wilderness Act and

enabling legislation allows for military overflights and was not intended to keep sound originating from outside the area emanating into wilderness.

- The DRAFT EIS states: Studies indicate that initially there is a startle affect on elk and other mammals; they seem to acclimate rather quickly and after a short while their heart rate does not elevate when they hear sonic booms. Therefore, elk and deer hunting would not be affected due to the proposed action.

It has been proven that low-altitude overflights and sonic booms do induce stress in animals. Increased heart rates, an indicator of excitement or stress, have been found in pronghorn antelope, elk, and bighorn sheep. The consequences of this disturbance are cumulative and may not cause obvious and serious health effects, but coupled with a harsh winter, it may have an adverse impact. Research has shown that stress induced by other types of disturbances produces long-term decreases in metabolism and hormone balances in wild ungulates. Animals newly or infrequently exposed to aircraft noise exhibit the “startle effect.”

R-145

Water Resources

- The DRAFT EIS states: The region of influence is not in a Coastal Zone or Floodplain and no Wild and Scenic Rivers exist; therefore, analysis of potential impacts to these resources is not considered further in this EIS.
- The DRAFT EIS states: No known or jurisdictional waters of the United States occur within the affected environment. A search for wetlands or jurisdictional waters of the United States indicates the lack of these resources; therefore, no direct or indirect impacts would be expected from implementation of the proposed action.

How can this be true? We have visited the community of McGill on several occasions and there are clearly wetlands and ponds as documented by the below photo:

R-146



- The DRAFT EIS states: Numerous streams and creeks exist under the Currie/Tippet ATCAA and proposed MOA.

The DRAFT EIS fails to address impacts to the “Numerous streams and creeks exist under the Currie/Tippet ATCAA and proposed MOA. Are these streams, creeks and ponds used by recreationalists and fisherman?”

R-147

Renewable Energy

- The DRAFT EIS states: Under the airspace, there are numerous rights-of way including two power plants in Steptoe Valley and wind farms in the Egan Range.
- The DRAFT EIS states: There are no significant cumulative impacts from this airspace proposal with other reasonably foreseeable actions either by the Department of Defense or Elko or White Pine County business practices or development.

Nevada has abundant solar, wind, and geothermal resources and a large potential for increased energy efficiency. Assessments for the Western Governors' Association, the National Renewable Energy Laboratory, and others indicate that the energy

efficiency/renewable resources alternative could meet the state's future growth in demand for electricity. What is the potential for wind farm workers to be startled while doing hazardous activities at the facilities? For example a worker scaling a wind tower, or working with hazardous materials. The USAF at Nellis has objected to wind farms in southern Nevada due to Special Use Airspace and MTRs training activities. Will the USAF be taking the same position and objecting to any proposed wind farms in the region?

R-148

R-149

Economic Impacts

The DRAFT EIS fails to address alfalfa hay production in White Pine County, Nevada, and its impacts on the White Pine County economy. The production activities of the alfalfa hay growers in White Pine County can be considered a basic industry as it draws dollars from outside White Pine County. These dollars may hire people from the local household sector such as laborers to work in the alfalfa hay fields. However, additional local economic linkages are from purchases of goods and services by alfalfa hay producers in the White Pine County local service sectors. These include businesses such as restaurants, gas stations, hotels and other retail businesses. As earnings decrease in these businesses, they will hire additional people and buy more inputs from other businesses. Thus the change in the economic base works its way throughout the entire local economy.

R-150

Agricultural activities for the White Pine County had a production level of \$4.240 million, hired 21 employees, and paid labor income of \$0.465 million. Given the multiplier impacts, agricultural operations had total economic impacts of \$5.394 million.

Since the USAF cannot control where chaff dispersal will occur. If purchasers of this hay were to learn that chaff and flare debris where in the hay they were purchasing and decided to take their business elsewhere what would be the negative economic and social ramifications for the county? Since the local households alter their consumption accordingly. The effect of this change in local household consumption upon businesses in a county what is the induced impact? What are the multiplier effects from all

R-151

economic factors for the proposed actions, including but not limited to recreational, property values, etc?

McGill Elementary School

The proposed action will generate many sonic booms in the area. Using the estimated operational scenario for supersonic operations what is the worst case scenario for the children in McGill, Cherry Creek, Lages Station, Callao, Trout Creek, Partoon and Currie and the McGill Elementary School, located within the southern tip of the MOA/ATCAA airspace. The DRAFT EIS claims that noise levels would be nearly imperceptible at this location. The DRAFT EIS does not in Table 2-11 the "Sonic booms could be heard at McGill Elementary.

R-152

- The DRAFT EIS states:"Potential impact to children from aircraft operating in the MOA/ATCAA would not be expected to pose safety risks to children as operations in the MOA/ATCAA would represent similar operations to those conducted in the UTTR airspace".

Children under the UTTR are also at risk. This is not a viable argument o justify impacts to the children of McGill, Cherry Creek, Lages Station, Callao, Trout Creek, Partoon, Currie and White Pine County and since the USAF would not propose these ultra hazardous actions over Salt Lake City or Las Vegas these children will be disproportionately impacted. The USAF is violating Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (Protection of Children) by subjecting rural children to unacceptable risks.

R-153

Is periodic intermittent noise is more likely to disrupt performance than a steady-state continuous noise of the same level? Is flyover noise and sonic booms, due to its intermittent nature, more likely to disrupt performance than a steady-state noise of equal level? Do the schools in McGill and the region meet ANSI standards for acoustical performance criteria in schools? If not does the USAF plan to build a new school for the community of McGill to meet these standards as an appropriate mitigation measure?

R-154

ANSI provides discussion on the relationships between noise and learning, and stipulates design requirements and acoustical performance criteria for outdoor-to-indoor noise isolation. School design is directed to be cognizant of, and responsive to, surrounding land uses and the shielding of outdoor noise from the indoor environment. ANSI has approved a new standard for acoustical performance criteria in schools. The new criteria include the requirement that the one hour-average background noise level shall not exceed 35 dBA in core learning spaces smaller than 20,000 cubic-feet and 40 dBA in core learning spaces with enclosed volumes exceeding 20,000 cubic-feet. This would require schools be constructed such that, in quiet neighborhoods indoor noise levels are lowered by 15 to 20 dBA relative to outdoor levels. Will a sonic exceed these safety standards? What if two sonic booms were to occur in a one hour period?

Hunting

Hunting plays a huge role in the economic viability of the region, especially elk hunting. Hunters from outside the area will either camp or stay in motels during their hunting trips to White Pine. With the exception of lodging, local hunters will spend about the same amount as out-of-area hunters including gas, groceries, and supplies^{xxii}.

The DRAFT EIS again downplays the potential impacts to wildlife resources including mule deer, antelope, elk and other species found in the region. Are wild ungulates much more sensitive to noise disturbance than domestic livestock?

R-155

Does terrain cover play a role in impacts of noise to ungulates? What are the effects on predator-prey interactions, reproductive success, and intra-inter specific behavior patterns? The abilities to hear sounds and noise and to communicate assist wildlife in maintaining group cohesiveness and survivorship. Will sonic booms and low level overflights impact social species communication, including the transmission calls of warning, introduction, and other communication types? Is there a potential that noise and sonic booms could disrupt a species' ability to communicate or could interfere with behavioral patterns? Could a sonic boom cause ear drum rupture or temporary and permanent hearing damage or changes? Will sonic booms cause stress and hypertension; behavioral modifications; interference with mating or reproduction; and

R-156

impaired ability to obtain adequate food, cover or water? Could there be tertiary effects including population decline and habitat loss due to any potential fires?

Could peak overpressures from focused sonic booms damage mammals hearing or cause temporary loss of hearing acuity? Will noise from aircraft affect changes in home ranges, foraging patterns, and breeding behavior? Are wild ungulates much more sensitive to noise disturbance than domestic livestock? Will the USAF be providing funding to the state of Nevada to determine impacts to ungulates as a mitigation measure?

R-157

Will there be a negative effect to wildlife from running and avoidance behavior and the increased expenditure of energy? What is the calculated expenditure of energy due to aircraft harassment from both the SOA and MTRs per minute when running and when walking? During harsh winter conditions, could this energy usage cause negative impacts? .

R-158

It has been proven that low-altitude overflights do induce stress in animals. Increased heart rates, an indicator of excitement or stress, have been found in pronghorn antelope, elk, and bighorn sheep and coupled with a harsh winter; it may have an adverse impact. Will the stresses induced by sonic booms and low level overflights produce long-term decreases in metabolism and hormone balances in wild ungulates? What are the possible behavioral responses ranging from mild to severe? Will wildlife attempt to escape as a severe response to sonic booms? Will behavioral effects decrease chances of surviving and reproducing include retreat from favorable habitat near noise sources and reduction of time spent feeding with resulting energy depletion?

R-159

Will high-noise events like a low-altitude aircraft overflight or sonic boom cause birds to engage in escape or avoidance behaviors, such as flushing from perches or nests? Will these activities impose an energy cost on the birds that, over the long term, may affect survival or growth? Will birds spend less time engaged in necessary activities like feeding, preening, or caring for their young because they spend time in noise-avoidance activity?

R-160

Are songbirds impacted by sonic boom events? Is there a potential negative impact to reproductive success in some perching birds or songbirds after exposure to low-altitude overflights or sonic booms? Will predator species leave their nests?

The DRAFT EIS provides inadequate analysis of the impacts to reptiles from low level overflights and sonic booms. What reptiles are found in the region of impact and what are the potential impacts?

R-161

What response do raptors have from low level overflights and sonic booms? What are raptor responses during nesting? Can a focused sonic boom break eggs? Do low level overflights and sonic booms cause noticeable alarm responses and limit productivity or reoccupancy?

R-162

Will sonic booms and low level overflights cause birds to engage in escape or avoidance behaviors, such as flushing from perches or nests? Will these activities impose an energy cost on the birds that, over the long term, that may affect survival or growth? Will the birds spend less time engaged in necessary activities like feeding, preening, or caring for their young because they spend time in noise-avoidance activity? Are there turkey farms in the region? How do domestic turkeys respond to noise and sonic booms?

R-163

R-164

The DRAFT EIS fails to adequately address potential impacts to cattle, sheep and other domestic animals found in the region. What effect with low level overflights and sonic booms overflight have on pregnant cattle, milk production, and cattle safety? Are there dairy farms in the region?

R-165

Is there any research or possibility that cows in late pregnancy may abort after showing rising estrogen and falling progesterone levels? Could feedlot cattle stampede and injure themselves when exposed to low-level overflights or sonic booms?

R-166

- The DRAFT EIS states: Wild horses and burros may be found on the lands under the proposed airspace.

The DRAFT EIS fails to adequately address how horses, both domestic and wild react to overflights and sonic booms of jet aircraft. Will horses be startled and gallop in

response to low level overflights and sonic booms? Do horses exhibit intensive flight reactions, random movements, and biting/kicking behavior from military overflights and sonic booms? During harsh winters or drought conditions could overflight reaction negatively impact survivability or reproductive success? Will horses, including pregnant mares have a “flight-fright “reaction? Would these reactions cause any increase in heart rates and serum cortisol concentrations? Could a rancher or recreationalist be bucked from a horse in reaction to a low level overflight or sonic boom?

R-167

Native American

- The DRAFT EIS states: American Indians may perceive the noise and overflights as an issue over traditional lands.

We support the Native American population in the region in objecting to the proposed action.

- The DRAFT EIS states: During the public meeting held in Elko, Nevada, a representative of the Te-Moak Tribe expressed concerns about sacred ancestral property under the proposed White Elk MOA. There was a concern that the noise and visual intrusions of aircraft overflights might interrupt religious ceremonies. Although all meetings were open to the public, one meeting in West Wendover was held specifically to discuss any American Indian concerns. Three members of the Goshute Indian Reservation attended and expressed concerns about safety (aircraft crashes), noise, and overflight effects on the local economy.

Today, Military Special Use Airspace impacts over 25% of the Native American lands in the US, in far greater portion to non native populations. The DRAFT EIS fails to adequately address the American Indian Religious Freedom Act. Will the USAF halt overflights during religious ceremonies? Is there any potential that a sonic boom could harm sacred burial sites under the protection of the Native American Grave Protection and Repatriation Act? Are there petroglyphs that could be damaged?

R-168

R-169

The Tribe conducts Elk, Mule Deer, Antelope, Turkey and Mountain Lion Hunts. How will the proposed actions impact these activities? Will there be an economic impact?

R-170

Conclusion

The DRAFT EIS does meet the basic requirements of NEPA. The DRAFT EIS clearly defines the continuing problems regarding the allocation of our natural resource of airspace amounts to an inter-agency swap between the FAA and DOD and ignores Federal Aviation Regulation (FAR) 91.817 prohibiting Supersonic Operation over the continental United States.

R-171

In conclusion, as detailed in our comments above, we find that the DRAFT EIS is fatally flawed in many ways. The analysis of environmental impacts of increased sonic booms in the proposed MOA is improper since it is based on averages, rather than the peak sound levels for a single incident. Using improper science, the DRAFT EIS attempts to obscure and negate the obvious negative impacts of the proposed actions by failing to properly analyze noise impacts. Unlike this DRAFT EIS the USAF has provided proper noise analysis in other EISs (see DRAFT ENVIRONMENTAL ASSESSMENT FOR FLIGHT TEST TO THE EDGE OF SPACE, September 2008). Therefore, we believe the DRAFT EIS must be rewritten to correct the many NEPA violations detailed in our comments and other public comments, and new hearings must be scheduled, with the corrected information.

R-172

R-173

Thank you for the opportunity to comment on this crucial issue. Please feel free to contact us with further question at gracepotorti@sbcglobal.net or by phone (775) 972-6670.

Sincerely,

Grace Thornton Potorti
Rural Alliance for Military Accountability

Delaine Spilsbury, Director
Bristlecone Alliance

Steve Erickson, Director
Citizens Education Project

Rose Strickland
Toiyabe Chapter of the Sierra Club

Katie Fite
Western Watersheds Project

i MEMORANDUM FOR RECORD, SUBJECT: PROCEEDINGS – AIR FORCE NORTHWEST MOUNTAIN REGION AIRSPACE/RANGE COUNCIL, MANAGEMENT SESSION, COUNCIL PROCEEDINGS FOR THE AFTERNOON OF MARCH 14, 2007

ii U.S. AIR FORCE FACT SHEET, F-16 FIGHTING FALCON,
[HTTP://WWW.AF.MIL/FACTSHEETS/FACTSHEET_PRINT.ASP?FSID=103&PAGE=1](http://www.af.mil/factsheets/factsheet_print.asp?fsid=103&page=1)

iii SENATE OKS \$91 MILLION FOR HILL AFB AND UTAH UNIVERSITIES, U.S. SENATOR BOB BENNETT, OCTOBER 7, 2005

iv ACOUSTICAL SOCIETY OF AMERICA, FIDELL S. SILVATI L., PEARSONS K. BN TECHNOLOGIES, A UNIT OF GTE INTERNETWORKING, CANOGA PARK, CALIFORNIA 91303, USA.

vANALYZING SONIC BOOM FOOTPRINTS OF MILITARY JETS, AUTHOR ANDY S. ROGERS, SENIOR ANALYST, AOT, INC.

vi SONIC BOOM CUTOFF ACROSS THE UNITED STATES, KENNETH J. PLOTKIN, *WYLE LABORATORIES, ARLINGTON, VIRGINIA, 22202*

vii NOISE STUDY FOR THE CITY OF EAGAN, WYLE LABORATORIES, INC, AUGUST 2005

viii HATCH, BENNET WEIGH IN FOR COMMENT PERIOD,
[HTTP://HATCH.SENATE.GOV/PUBLIC/INDEX.CFM?FUSEACTION=PRESSRELEASES.PRINT&PRESSRELEASE_ID=485DDAC9-5F06-4989-8408-17E07F998784&SUPPRESSLAYOUTS=TRUE](http://hatch.senate.gov/public/index.cfm?fuseaction=pressreleases.print&pressrelease_id=485DDAC9-5F06-4989-8408-17E07F998784&suppresslayouts=true)

ix FINAL ENVIRONMENTAL IMPACT STATEMENT ESTABLISHMENT OF THE GANDY RANGE EXTENSION AND ADJACENT RESTRICTED AIRSPACE AS AN AREA FOR SUPERSONIC FLIGHT TRAINING HILL AFB, UTAH

x U.S. AIR FORCE FACT SHEET, F-16 FIGHTING FALCON,
[HTTP://WWW.AF.MIL/FACTSHEETS/FACTSHEET_PRINT.ASP?FSID=103&PAGE=1](http://www.af.mil/factsheets/factsheet_print.asp?fsid=103&page=1)

RAMA 6670 Peppermint Drive Reno, Nevada 89506

xi U.S. AIR FORCE FACT SHEET, F-16 FIGHTING FALCON,
[HTTP://WWW.AF.MIL/FACTSHEETS/FACTSHEET_PRINT.ASP?FSID=103&PAGE=1](http://www.af.mil/factsheets/factsheet_print.asp?fsid=103&page=1)

xii SENATE OKS \$91 MILLION FOR HILL AFB AND UTAH UNIVERSITIES, U.S. SENATOR BOB BENNETT,
 OCTOBER 7, 2005

xiii U.S. NAVY, 1985 DEIS, P. 5-51

xiv MIGHT CHEMICAL IN TEFLON POSE HEALTH RISK? THE ASSOCIATED PRESS, WED., JAN. 12, 2005

xv LAS VEGAS NOW, EDWARD LAWRENCE, REPORTER, FIRE IN LAS VEGAS SKY CAUSED BY MILITARY
 FLARE
 OCT 19, 2006

xvi ASSOCIATED PRESS, CREWS WORRY ABOUT WIND SPREADING N.J. FIRE; NATIONAL GUARD SAYS
 MILITARY FLARE LIKELY CAUSE, WEDNESDAY, MAY 16, 2007

xvii SYDNEY MORNING HERALD, ARMY FLARE SPARKED NSW SOUTH COAST FIRE, OCTOBER 16, 2008 -
 3:07PM

xviii OCEAN CITY: ANOTHER MILITARY FLARE FOUND ON CITY BEACH, JENNY HOPKINSON, OCTOBER
 13,2008,
[HTTP://WWW.DELMARVANOW.COM/APPS/PBCS.DLL/ARTICLE?AID=/20081013/WCT01/81013052/1002/RSS](http://www.delmarvanow.com/apps/pbcs.dll/article?aid=/20081013/WCT01/81013052/1002/RSS)

xix GLOBAL SECURITY. ORG, FLARES - INFRARED COUNTERMEASURES,
[HTTP://WWW.GLOBALSECURITY.ORG/MILITARY/SYSTEMS/AIRCRAFT/SYSTEMS/FLARES.HTM](http://www.globalsecurity.org/military/systems/aircraft/systems/flares.htm)

xx ALUMINUM, ALZHEIMER'S DISEASE AND BONE FRAGILITY MJÖBERG B. (1) ; HELLQUIST E. (1) ;
 MALLMIN H. (1) ; LINDH U. (2) (1) DEPARTMENT OF ORTHOPEDICS, UPPSALA UNIVERSITY HOSPITAL, 751
 85 UPPSALA, SUEDE
 (2) DEPARTMENT OF BIOMEDICAL RADIATION SCIENCES, UPPSALA UNIVERSITY HOSPITAL, 751 85
 UPPSALA, SUEDE

xxi SENATE OKS \$91 MILLION FOR HILL AFB AND UTAH UNIVERSITIES, U.S. SENATOR BOB BENNETT,
 OCTOBER 7, 2005

xxii SUMMARY OF INFORMATION REGARDING THE ECONOMIC VALUE GENERATED BY AGRICULTURAL AND
 RECREATIONAL ACTIVITY, KAREN RAJALA, WHITE PINE COUNTY, JUNE 2006

Authorities investigate how dummy bomb fell from military jet and hit truck on civilian turf

LAS VEGAS (AP) _ Authorities are investigating how a dummy bomb fell from a military jet and hit a
 truck traveling near a Nevada Air Force base.

Police and Nellis Air Force Base officials say no one was hurt in the accident Wednesday morning.

The 25-pound device landed just within the air base and broke apart before a piece bounced toward a
 boulevard and hit the truck.

The training weapon looks like a real bomb carried by fighter aircraft. It carries a small smoke charge
 to mark its impact point.

(This version restores a dropped word to CORRECT that no one was hurt, instead of one

hurt.)

LITTLEFIELD, Arizona (CNN) -- A plane from Nellis Air Force Base in Nevada crashed Monday in the Virgin River Gorge near the Arizona-Utah state line.

Base spokesman Mike Estrada told CNN the pilot of the A-10 Thunderbolt II, a single-seat ground attack jet, survived and was being taken to a hospital in Las Vegas, Nevada.

Estrada said the jet took off from Nellis but was not based there. The base is just northeast of Las Vegas.

Sherrie Rhoades, a spokeswoman for the Beaver Dam-Littlefield Fire Department, said some evidence of the crash was visible from a distance.

"We could just see smoke coming from the top of the mountain," she said.

The crash was reported at 12:39 p.m. in Mojave County, six miles from Beaver Dam. The plane went down in an area less than a mile from Interstate 15.

The Virgin River runs from central Utah to Lake Mead in southern Nevada. On its course, it cuts through the Beaver Dam Mountain range. The gorge separates the Utah desert from the one-time marsh area in southeast Nevada now known as the Virgin Valley.

No Comment from Military On Crash Of F-15E Jet

Posted: Jun 5, 2003

JOHNSTON COUNTY, N.C. &MDASHAir Force officials are investigating what caused a fighter jet to crash during a training exercise 25 miles west of Seymour Johnson Air Force Base Wednesday afternoon.

Military officials said the pilot and the weapons systems officer ejected safely from the F-15E Strike Eagle before it went down around 5 p.m. in a wooded area near Strickland Crossroads Road in Four Oaks. The jet was assigned to the 4th Fighter Wing at Seymour Johnson Air Force Base.

Johnston County sheriff Steve Bizzell said one flier's parachute snagged in a tree about 30 feet off the ground before he was rescued about an hour after the crash.

"We're just grateful that our people are safe, and they get to go home to their families," said Staff Sgt. Bryan Bouchard, a 4th Fighter Wing spokesman who reported to the scene Wednesday evening.

Air Force emergency response teams were sent to the scene, about 25 miles west of the base. A second Air Force jet circled over the crash scene.

Bizzell said the jet crashed in a heavily forested area away from any homes or other structures.

Citizens call for 'no boom' zones

Dianne Stallings dstallings@ruidosonews.com

Article Launched: 10/28/2008 07:35:15 PM MDT

Sonic booms from aircraft exercises out of Holloman Air Force Base sparked a plea from residents of two communities to divert flights from their air space.

David Thomas last week told Lincoln County commissioners he was at their meeting with neighbors from White Oaks to ask for help.

"The past couple of weeks we've experienced sonic booms that coincided with the arrival of a few of the F22s at Holloman," Thomas said.

"I have lived in the general area most of my life and am familiar with the sound of sonic booms, but these we're experiencing are far louder and more powerful than anything I've heard before. They are more like sonic explosions."

Thomas said he was in a pasture with some horses the last time a boom hit and just missed being trampled by panicked animals.

"My wife thought the window blew out of the house and a neighbor thought a propane tank exploded," he told commissioners.

County Manager Tom Stewart said Thomas' request already was passed to the Air Force.

Commission Chairman Tom Battin said the board can vote on a resolution Nov. 7, backing the idea of excluding White Oaks and another settlement, Nogal, because both sit in "bowls" surrounded by mountains, which intensifies the sound.

At that special commission meeting, officials from Holloman are expected to attend and give a presentation on the situation at the base and the new planes.

"Once we've had additional public input and heard from the Air Force," a resolution could be approved, Battin said, adding, "We owe them that."

Commissioner Eileen Lovelace Sedillo said the Air Force commands plenty of flat land where exercises can be conducted safely and without major impacts to residents.

"They control land larger than some states and the loud booms should be confined to that area," Thomas agreed. "There's no reason why not."

He pointed out that White Oaks holds a prominent position in the history of the county and about a dozen century-old structures still stand, some are homes to his neighbors.

"There is no way they can stand up to the pounding and explosive concussions of the sonic booms," Thomas contended.

Several people in the community derive their incomes from livestock operations, he said. The hazards of working around large animals intensify when a sonic boom hits, he said. The booms also can result in negative effects on the animals.

"I can't emphasize to you enough these are not the typical booms many are used to hearing here," Thomas said. "They are powerful, crashing sonic explosions," which also could be upsetting to the elderly dealing with chronic health concerns.

"We're in front of you today when there are only a few airplanes and they anticipate 40 within the next year," he said. "We respectfully ask you to formally request the White Oaks area be an exclusionary zone, as was done for the Ruidoso area."

Sedillo said she hears the booms in Carrizozo, but it lies on a flat plain and White Oaks sits in a bowl where the sound would be much worse.

Battin said he and Stewart met with a retired brigadier general, who represents the governor and he agreed to help with the issue. Stewart added that the Holloman presentation was a result of that meeting.

Battin encouraged as many people as possible to attend to hear what the officials say. The special meeting, called to certify general election results, will begin at 9 a.m. in the commission chambers at the county courthouse in Carrizozo.

Caroline McCoy of Nogal asked commissioners to add her community to the "no boom" list, saying many people ride horses there and could be injured or killed. She recalled previous work for an architectural firm in Carlsbad when sonic booms cracked the foundation limestone caprock on which a historic structure was built. "This is very serious and I would like to include Nogal," she said. "You look up and the plane is gone, but it sounds like a propane tank exploded on the roof."

Rich Gross of Capitan said his area was experiencing the same thing in the spring and summer. "I wondered where they went, obviously to White Oaks."

He said he was riding a horse in the mountains when one hit and only because the horse was experienced and well trained was he unharmed. He's heard the same thing in the Bonito Lake area, he said.

A major air exercise was scheduled last Thursday, and no complaints were received about the sonic booms.

F-15 crashes in Nevada during training, killing 1

LAS VEGAS - An Air Force official says the crash of an F-15 jet in the Nevada desert during a training exercise has left one pilot dead and the other injured.

Air Force spokesman Andrew Dumboski says the two-seater plane went down at about 11:30 a.m. Wednesday on the Nevada Test and Training Range outside of Goldfield, Nev.

RAMA 6670 Peppermint Drive Reno, Nevada 89506

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PUBLIC HEARING
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR PROPOSED WHITE ELK MILITARY OPERATIONS AREA
ELY, NEVADA
TUESDAY, SEPTEMBER 2, 2008

Reported by:
Donna J. Rudolph, RPR, CCR No. 420
CA CSR No. 9652
Job No. 94476

□

2

3 AIR FORCE REPRESENTATIVES:

4 Sheryl Parker, Air Combat Command White Elk MOA
Lt. Colonel David Francis, JAG
5 Lt. Colonel Bill Lyons, 419th Fighter wing
Elliott Sanders, Headquarters Air Combat Command
6 Airspace and Ranges
Jerry Angus, Airspace and Aircraft Operations
7 Sr. Airman Brok McCarthy, Public Relations
Barbara Fisher, Public Relations

8

TEC, INCORPORATED:

9

10 KEVIN J. PETER, Principal/Office Manager
DAVID A. JETT, Program Director
TAMARA SHAPIRO
11 CHAREE D. HOFFMAN

12

13

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1 ELY, NEVADA; TUESDAY, SEPTEMBER 2, 2008

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6:04 P.M.

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4 MS. PARKER: Good evening, everyone.

5 AIRMAN MCCARTHY: I'd like to welcome you all to
6 the draft environmental statement public hearing for the
7 proposed White Elk MOA. At this time, I'd like to introduce
8 the Air Force representatives who will be either moderating
9 or representing this evening.

10 First, Michelle Parker, the Air Force combat
11 command White Elk MOA Environmental Impact Statement or EIS
12 project manager and Colonel David Francis, the hearing
13 officer. Excuse me. I would now like to ask Colonel
14 Francis to begin the formal portion of this meeting.

15 COL. FRANCIS: Good evening.

16 Because we have so few people here, it will be a
17 little less formal than it would otherwise be. There will
18 be some things we do have to cover because the law requires
19 it. As indicated earlier, I'm Colonel Dave Francis, and
20 will be the presiding officer at this public hearing for the
21 White Elk MOA. The hearing is being held in accordance with
22 the provisions of the National Environmental Policy Act and
23 the regulations that are published by the Council on
24 Environmental Quality. The purpose of this hearing is to
25 receive public comments, that is, your comments, on the

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1 Draft Environmental Impact Statement for the White Elk MOA.

2 Before going any further, I'd like to explain my
3 role in this hearing. I am a full-time military judge on
4 the Air Force Court of Criminal Appeals, in Washington,
5 D.C. I am not assigned to Hill Air Force Base or to the Air
6 Combat Command, which are the primary entities associated
7 with this proposal. I have not been involved in the

8 development of the Draft EIS and I am not here to act as a
9 legal adviser to the Air Force representatives for this
10 proposal.

11 Rather, my role as the hearing officer is simply
12 to ensure that we have a fair, orderly, and impartial
13 hearing, and that all who wish to speak, you have the
14 opportunity to do so. In short, I will be serving solely as
15 an impartial moderator for this hearing.

16 The hearing will be conducted in two parts.

17 First, Miss Sheryl Parker, who serves as the white
18 Elk MOA EIS Team Leader from Air Combat Command will make a
19 presentation on the background of the white Elk MOA
20 proposal. She will then outline for you the National
21 Environmental Policy Act (NEPA) process as it relates to
22 this Draft EIS, and will summarize the EIS analysis.

23 After Miss Parker's presentation, you will have
24 the opportunity to provide the Air Force with your comments
25 you wish to. The input you give will provide the

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1 decision-makers for the white Elk MOA the benefits of your
2 knowledge of the local area and make sure they are aware of
3 any concerns you may have about the Draft EIS analysis.

4 Throughout the hearing, please keep in mind that
5 this is not an arena for debate; nor is it designed as
6 question-and-answer session. Rather, this hearing is the
7 venue Air Force uses to gather your concerns and any --
8 gather any additional data or recommendation changes you may
9 wish to provide, whether through oral or in written
10 comments, regarding the environmental analysis and the

11 environmental impacts identified under the proposed action
12 and alternatives.

13 When you came in, I know that all of you were
14 asked to register and fill out a card indicating whether you
15 would like to make an oral presentation. I understand we
16 have no one at this point who signed up to speak in evening.
17 If you do not want to do so when you came in but if you wish
18 to do so now, just let us know, and we'll be glad to
19 entertain that.

20 THE CROWD: I'm still thinking about it.

21 MS. PARKER: Leave it on the table.

22 COL. FRANCIS: You can officially comment in
23 several ways: You can speak this evening and have it
24 recorded by the court reporter. You can provide comments in
25 writing by submitting them during this hearing or through

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6

1 the mail. Or you can give extended written remarks to the
2 court reporter as part of your presentation. You are not
3 restricted to one method of commenting, but you may use any
4 or all of these methods to provide comments, either alone or
5 in any combination you choose. All comments, in whatever
6 form, will be considered.

7 If you would like to turn in your comments at this
8 hearing, of course, you can give them to any one of the Air
9 Force representatives located in the room or at the sign-in
10 table. Please keep in mind that if you don't wish to make a
11 comment this evening or provide written comments, you can
12 still do so throughout the comment period, which runs
13 through September 29, 2008.

14 I think we have before you later a slide that will
15 show the address that you can send them those to. address
16 listed for you in some of the materials that were handed
17 out. Please ask one of the Air Force represents advertise
18 and they'll be glad to give it to you.

19 At this time, we will turn it over to Miss Parker
20 and provide the Air Force presentation.

21 MS. PARKER: Good evening, I'm only wearing these
22 glasses. It's like a fashion statement. I really don't
23 need them. So just realize that. They really don't help at
24 all.

25 Good evening everyone. And I'd like to thank you

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7

1 for coming out to the white Elk Military Operations Area
2 Draft Environmental Impact Statement public hearing. That's
3 a mouthful. This week we are holding three meetings in the
4 Nevada communities that lie near the proposed white Elk MOA
5 and the affected areas. These are the locations of the
6 meetings as well as the dates. Okay.

7 Before we go any further however, I'd like to
8 introduce the rest of our Air Force team present and present
9 a brief description of the proposed white Elk MOA, review
10 the Environmental National Policy Act, or what we sometimes
11 call NEPA process, associated with the proposal and then
12 follow this with a brief overview of the Draft Environmental
13 Impact Statement analysis and its findings.

14 Our hearing officer, Colonel David Francis, will
15 then outline how the public hearing will be conducted to
16 ensure that everyone has an opportunity to comment,

17 especially since no one's signed up to comment, we will
18 probably have ample time.

19 As I mentioned earlier, my name is Sheryl Parker.
20 And I am joined this evening by Colonel David Francis who's
21 the hearing officer and will facilitate the meeting. In the
22 display area, we are -- we're joined by Hill Air Force Base
23 personnel intimately familiar with the base and the Utah
24 Test and Training Range Operation. Mr. Jerry Angus is the
25 airspace and aircraft operations person.

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1 Other Hill Air Force Base representatives include
2 Airman Brock Murphy and Miss Barbara Fisher from public
3 affairs and the Lieutenant Colonel Bill Lyons from the 419th
4 Fighter Wing. Also here this evening is Mr. Elliott Sanders
5 who is with Headquarters Air Combat Command Airspace and
6 Ranges office. As well as representatives from contracting
7 firm TEC, Incorporated, who is -- are assisting the Air
8 Force in putting together this document and conducting the
9 analysis.

10 We're here this evening, as Colonel Francis said,
11 to gather comments on the Draft Environmental Impact
12 Statement concerning the Air Force proposal which would
13 establish a new Military Operations Area linked to the
14 existing Utah Test and Training Range. The proposed White
15 Elk MOA would underlie the existing Utah Test and Training
16 Range airspace that consists of the -- of the Currie/Tippet
17 Air Traffic Control Assigned airspace. From now on, I'm
18 going to say ATCAA instead of Air Traffic Control Assigned
19 Airspace, if that's all right with everyone.

20 The white Elk MOA would extend from 14,000 to
 21 18,000 mean sea level. The ATCAA currently extends from
 22 18,000 feet mean sea level to 58,000 mean sea level. The
 23 388th Fighter wing which also includes the 419th Fighter
 24 wing would conduct ready air combat programs and other
 25 training in the airspace.

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9

1 This training would include the use of chaffe and
 2 flares in the MOA as well as the overlying existing
 3 Currie/Tippet ATCAA as well as supersonic flight operations
 4 in the Currie/Tippet ATCAA above 18,000 feet mean sea level.

5 The purpose of and the need for the white Elk MOA
 6 is to provide the 388th and 419th Fighter wings with
 7 consistent and reliable training airspace to ensure that
 8 they are combat ready. Combat readiness requires training
 9 airspace to be configured and sized to allow the pilots to
 10 practice current tactics at supersonic speeds and a full use
 11 of the F-16s capabilities.

12 However, there are scheduling priorities and
 13 access limitations for UTTR currently that prevent the 388th
 14 and the 419th from accomplishing all their required
 15 training. NEPA requires that agencies like the Air Force
 16 and the BLM and the U.S. Forest Service also evaluate the
 17 no-action alternative in comparison to the proposed action
 18 when we conduct the NEPA analysis.

19 What the no-action means is that the proposed
 20 action, in this case the white Elk MOA would not occur. And
 21 under the no-action alternative for this EIS, the white Elk
 22 MOA would not be established. Supersonic activities in the

23 ATCAA would not be authorized and no chaff and flare use
24 would occur in the airspace.

25 It also means that the 388th and the 419th Fighter

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10

1 wings would not be able to achieve all of its training
2 requirements, and this limitation would affect the combat
3 readiness of these pilots.

4 Now, under the proposed action, the white Elk MOA
5 would overlie portions of White Pine and Elko counties in
6 northeastern Nevada as this map depicts. The airspace, as I
7 said earlier, would be used by the 388th and the 419th to
8 a -- and to a lesser degree, other Air Force and Navy
9 aircraft. This MOA would underlie and generally align with
10 the current Currie/Tippet ATCAA so that the two units could
11 be scheduled and used together.

12 Horizontally, the boundaries would match those of
13 the overlying Currie/Tippet ATCAA on the north, east, and
14 most of the west. If you can see, just southwest, where the
15 current ATCAA is, the MOA would not fall in that airspace.
16 The new white white Elk MOA would extend from 14,000 feet
17 mean sea level up to 18,000 feet mean sea level, and the
18 ATCAA extends currently from 18,000 feet to 58,000 feet mean
19 sea level.

20 You'll notice, as I said earlier, that the MOA
21 underlies the majority of the Currie/Tippet ATCAA with the
22 exception of that Southwest corner over there.

23 The Air Force recognized the need to be able to
24 maximize training time and minimize the amount of transit
25 time that the 388th and the 419th F-16s flew. Having to fly

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11

1 long distances to remote training airspace and then return
2 to Hill Air Force Base would substantially limit their
3 training time. So the Air Force sought to identify existing
4 airspace within a flying radius of a hundred 50 nautical
5 miles of Hill Air Force Base. The western portion of Utah
6 Test and Training Range complex contained in the
7 Currie/Tippet ATCAA lies within a hundred 20 to a hundred 40
8 nautical miles from Hill Air Force Base which is within the
9 required distance threshold.

10 Flying to other locations like the Nevada test and
11 training range in Nevada or the Mountain Home range complex
12 in Idaho would expend flying hours and provide minimal, if
13 any, combat training. Next slide.

14 To evaluate the potential locations for the
15 airspace, the Air Force conducted preliminary research and
16 consulted with the Federal Aviation Administration. A
17 search of the area adjacent to and surrounding the Utah Test
18 and Training Range for a blocked airspace revealed potential
19 conflicts with airports, jet routes, approaches and
20 departure paths, and other components of civil aviation to
21 the north, south, and east of the Utah Test and Training
22 Range.

23 To the north and the northeast of the Utah Test
24 and Training Range, any new airspace would impede
25 substantial -- substantially on commercial air traffic above

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12

1 20,000 feet mean sea level, and in particular, commercial
2 air traffic from Atlanta, Dallas/Ft. Worth, Houston, Denver
3 and Memphis to Seattle. Flights from Boston, New York City,
4 Chicago, and Minnesota to Oakland would also transit these
5 areas.

6 Now, areas directly east of Hill Air Force Base
7 and the Utah Test and Training Range airspace would also
8 pose conflicts with commercial aviation. To the south and
9 southeast, all commercial air traffic coming from the east,
10 southeast, and south to Salt Lake City transit the area.

11 Far less traffic occurs in the west. The western
12 side of UTTR, as you can see, lies in what we call an
13 airspace shadow of the existing Utah Test and Training Range
14 where less civilian and commercial air traffic occur. The
15 shadow results from the Utah Test and Training Range
16 preventing east to west and west to east traffic and the
17 absence of any large metropolitan area with airports.

18 Now that we've -- I've outlined the proposal,
19 why's the Air Force conducting these meetings? The National
20 Environmental Policy Act requires that all federal agencies
21 consider the effects of their actions on the natural and
22 human environment. And it also requires that the agency
23 document and analyze the impacts that would occur due to the
24 proposal.

25 It mandates that these impacts be disclosed and

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1 presented to the public. The Act also calls for the public
2 to be involved in identifying potential alternatives to the
3 proposed action, and it also provides for a process where

4 the public can provide their issues and concerns with the
5 proposal. This slide outlines the NEPA process.

6 We started in November of 2007 with the
7 publication of a Notice of Intent in the Federal Register,
8 and we also advertised this intent in local newspapers and
9 we conducted scoping meetings and scoping in December of
10 2000 where we were out at the same locations we're holding
11 the public hearings.

12 Preparation of the EIS began after the scoping
13 period ended. The next step included an announcement in the
14 Federal Register and local newspapers of the Draft EIS's
15 availability. And this was done in the Federal Register on
16 August 15th of this year. This marked the -- the official
17 beginning of the 45-day public comment period. As part of
18 the open disclosure of the proposal's impacts, the Air Force
19 provided copies of the Draft EIS to other federal agencies,
20 state and local entities, national and state-elected
21 officials and the public who had requested copies since the
22 process had begun.

23 The comments we receive during this public comment
24 period will be used in preparing the final EIS which we
25 anticipate being published in the January 2009 time frame.

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1 Following publication of the final EIS, there will be a
2 30-day waiting period before any record of decision on the
3 proposal can be signed.

4 Again, the Federal Register will announce this
5 decision and the public notification of the decision will be
6 announced in the local papers. That then is a short

7 description of the NEPA process.

8 This evening I will brief -- briefly present an
9 overview of the potential impacts that could occur as a
10 result of this proposed White Elk MOA being established.
11 And then we'd like to hear your comments, if you have any,
12 that you'd like to give to us during this meeting.

13 The Air Force used comments from scoping and the
14 elements of the proposed action to define the potentially
15 affected environment. And through this process, we
16 identified nine resource areas ranging from noise to
17 environmental justice. What -- what follows is a brief
18 summary of the Draft EIS findings regarding the
19 environmental impacts to these nine resource areas. Okay.

20 The White Elk MOA would overlie 1,674 nautical
21 miles and underlie all but the southwestern portion of the
22 existing current -- Currie/Tippet ATCAA which covers 1,993
23 square miles. With the addition of the White Elk MOA, the
24 volume of the Utah Test and Training Range airspace would
25 increase by 1.4 percent. Now F-16s currently fly in the

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15

1 Currie/Tippet ATCAA; however, supersonic flight and the use
2 of chaffe and flare is not permitted.

3 In 2007, there were 548 sortie operations flown in
4 the ATCAA under this proposal, the number of annual sortie
5 operations in the combined MOA and ATCAA will increase to no
6 more than 9,590. Most of these operations, approximately
7 96 percent of them, would be conducted by F-16s from Hill
8 Air Force Base which would fly 85 percent of that time in
9 the existing ATCAA above 18,000 feet mean speed limit.

10 Supersonic flight would occur and training chaffe
11 and flares would be used during these training sortie
12 operations. It is anticipated that there would be no impact
13 on civil or commercial aviation. Through coordination with
14 the Federal Aviation Administration and input from the local
15 airports, the MOA was configured to reduce potential
16 conflicts.

17 There are no public airports underlying the
18 proposed White Elk MOA and commercial air routes are not
19 common in the affected air. The Ely airport is located
20 about 15 miles from the southwestern -- I was going to point
21 to the map that's not there anymore -- of the southwestern
22 edge of the proposed MOA airspace.

23 Glider operations in the vicinity of the MOA could
24 be affected. But the 388th the 419thth Fighter wing would
25 develop their schedule to avoid serious conflicts such as

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16

1 not scheduling the use of the MOA during glider week.

2 A little bit about noise. There are two kinds of
3 noise that are discussed in the environmental impact
4 statement: The first is conventional subsonic noise as
5 generated by an aircraft's engines and air freight.

6 The second type is noise that is supersonic:
7 Supersonic flight creates sonic booms which are generated by
8 the aircraft when it flies faster than the speed of sound.
9 Sonic booms are described as brief impulsive sounds. And as
10 I mentioned earlier, supersonic operations would occur above
11 18 million feet mean speed level.

12 According to the federal interagency committee on
Page 14

13 urban noise, noise exposure greater than 65DNL which is
 14 Day-Nite Noise Level is considered generally unacceptable
 15 over public services or residential, cultural, recreational,
 16 and entertainment areas.

17 For this EIS, we looked at 20 points of interest
 18 and evaluated them for noise. Overall, the subsonic noise
 19 levels for the area under and near the proposed White Elk
 20 MOA and the overlying ATCAA would not increase perceptibly.
 21 Although there are slight changes in the noise levels, there
 22 would be -- they would continue to remain below 45DNL.

23 And these noise levels are low and not considered
 24 an impact to people or animals. Supersonic noise is
 25 represented using what's called CDNL which the C stands for

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17

1 a c-weight which is a specific measurement of the weight
 2 that's used for subsonic -- or supersonic noise.

3 The noise in the center of the ATCAA, airspace
 4 from sonic booms would be about 49 decibels, CDNL, which
 5 equates to about 55DNL. On average, ten sonic booms would
 6 occur through the entire airspace per day. Since not all
 7 booms would reach the ground, it is estimated that only one
 8 sonic boom would be heard in the center of the airspace
 9 every two days.

10 No damage to structures such as buildings,
 11 windmills, or radio towers would be expected from the sonic
 12 booms. Vibrations from sonic booms would be far less than
 13 the ten or greater pounds per square foot that's necessary
 14 to cause any structural damage.

15 In terms of safety, the 388th and the 419th

16 Fighter wings will continue to train as they normally do in
 17 accordance with all the safety directives required by the
 18 Air Force and the FAA. Only training chaffe authorized for
 19 use in the White Elk MOA and the Currie/Tippet ATCAA would
 20 be used. Flares would be used in the training airspace.
 21 Their combat command does not allow or authorize release of
 22 flares below 2,000 feet AGL. And to provide sufficient time
 23 for the flares to burn, this requirement is put in place.
 24 Under this proposal, no flares would be released
 25 in the MOA below 14,000 feet mean sea level or 3,100 to

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18

1 8,500 feet AGL. There's no anticipated increase in bird
 2 aircraft strikes since the operating altitudes in the MOA
 3 would average 3,000 to 8,000 feet AGL, which is above most
 4 burn activity. Class A aircraft mishaps are those mishaps
 5 that result in loss of life or destruction of an aircraft
 6 and provide an indicator of aircraft safety.

7 For this EIS, the mishap rate for the F-16 in the
 8 proposed ATCAA was calculated using the lifetime mishap rate
 9 of 3.82 per 100,000 flying hours. With relatively few
 10 flying hours currently flown in the Currie/Tippet ATCAA, the
 11 years between mishaps is a hundred 39 years.

12 Now based on the projected annual operations of
 13 the F-16 in the proposed MOA ATCAA airspace, the estimated
 14 years between mishaps would be 6.4 years. Now, please keep
 15 in mind that these are statistical estimates and they are
 16 not predictions. Concerns over the safety -- over safety of
 17 civil -- civilian aircraft and gliders were expressed during
 18 the scoping period, and general aviation pilots would

19 continue to use the sea and avoid rules.

20 During peak glider events, Hill Air Force Base
21 would not operate in the MOA or the ATCAA airspace. And the
22 proposal to expend chaffe in the new airspace would not
23 create any flight or safety issues. There would be no
24 change to the land status or management that would occur
25 since all the aircraft operations would occur in airspace.

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19

1 Sonic booms that would be generated from
2 supersonic operations would not adversely impact any one
3 location or affect any land uses below the airspace. Noise
4 heard in the wilderness areas would increase, but they would
5 still remain at low subsonic levels of less than 45DNL. And
6 supersonic levels of about 49CDNL, which I said earlier was
7 about 55 or 50DNL. I apologize.

8 Aircraft are currently in the ATCAA airspace,
9 however, visual observance of contrails in the ATCAA would
10 be expected to increase. Overall, there'd be no adverse
11 impacts to the biological resources found under or adjacent
12 to the proposed MOA. There are no federally listed plants
13 or animal species located under the airspace.

14 Pictured here is the pygmy rabbit that the U.S.
15 Fish and Wildlife Service has petitioned to list on the
16 Endangered Species Act. The pygmy rabbit can be found under
17 the proposed airspace. Impacts to biological resources from
18 chaffe and flare residue or fire would not be anticipated.
19 Residue from chaffe or flares would not have an adverse
20 impact to plant or animal species. The potential for fires
21 from fliers would be remote considering the altitude of

22 proposed release.

23 In regards to sonic booms, studies have indicated
24 that wildlife species with the -- with the exception of
25 threatened and endangered or special set species tend to

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20

1 habituate to sonic booms with no long-term adverse affects,
2 and there are no known wetlands underlying the proposed
3 airspace.

4 There are three national register properties that
5 are located in the MOA ATCAA; however, no impasse to these
6 resources would be anticipated. As presented under the
7 noise section, vibrations from sonic booms would be far less
8 than the ten or greater pounds per square foot necessary to
9 cause structural damage.

10 No traditional resources have been identified
11 under the airspace. And as previously mentioned, impacts
12 from fire due to chaffe and flares or aircraft mishaps would
13 not be anticipated. Flares would not be released below
14 14,000 MSL, and the floor of the MOA would range from 3,100
15 to 8,500 AGL or higher throughout the MOA ATCAA footprint.

16 As part of the NEPA process, the Air Force
17 contacted 37 American-Indian tribes, colonies, and other
18 organizations regarding our Air Force proposal. The list
19 was compiled from 19 tribes contacted by Hill Air Force Base
20 as part of their consultation process, and additional tribes
21 included in consultation with the Elko and Ely districts of
22 the BLM.

23 The findings of the EIS indicate that no
24 anticipated impact to traditional cultural ceremonies or

25 resources from implementing the proposed action would occur.

□

21

1 Sonic booms or subsonic noise would not disrupt traditional
2 cultural ceremonies or harm traditional plants, animals, or
3 other resources.

4 Under the proposed action, access to local
5 airports would remain unchanged resulting in no changes to
6 airport revenues and associated expenditures by tourists.
7 Land development would not be restricted by this airspace
8 proposal and no permanent structures or equipment would be
9 placed on the ground.

10 The Air Force would mitigate flight activity in
11 the MOA and overlying ATCAA during extensive glider
12 activities. Current aviation rules in existence are in
13 existence which allow civilian and commercial traffic to
14 transit the MOA and would not change. It is anticipated
15 that revenues at local airports would not be impacted due to
16 the remote location of the MOA.

17 Local county populations would not be affected,
18 and this airspace proposal would not impact development
19 projects in the region. In regards to environmental justice
20 and protection of children, no disproportionate impacts to
21 low incomes or minority populations would be expected. And
22 no increased safety risks to children due from the proposed
23 operations in the MOA ATCAA airspace would be expected.
24 Subsonic noise levels would remain below 45DNL while noise
25 due to sonic booms would generate noise levels at a

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1 comparable up to 55DNL, the center of the airspace, and this
2 level does not exceed the levels identified by U.S. EPA as
3 protected for public health.

4 Supersonic noise would affect the area population
5 as a whole, however, the noise would be short term in
6 duration and not expected to have an adverse affect on human
7 health and environment. Increased noise levels at McGill
8 Elementary School would remain less than 45DNL, and McGill
9 Elementary is located on the edge of the airspace. It would
10 be nearly imperceptible.

11 Potential impact to children from aircraft
12 operating in the MOA and ATCAA would not be expected to pose
13 safety risks to children's as operations into the airspace
14 would represent similar operations as those conducted in the
15 UTTR airspace.

16 This ends my presentation of the draft analysis,
17 and at this point, I would like to turn the hearing over to
18 Colonel David Francis to begin the oral comment portion of
19 this evening's meetings.

20 COL. FRANCIS: We have now reached the second part
21 of this hearing where you actually get a chance to make
22 comments, if you wish to do so. And again, you can do that
23 in any way you want to, either oral or in writing or both.

24 Does anyone here tonight wish to make an oral
25 presentation?

□

1 MS. PARKER: One of the things I would like to add

2 is that when I'm giving this presentation, sometimes it is
3 overwhelming because we talk about things like CDNL and DNL
4 and LDNL and we talk about chaffe and flares and use of
5 chaffe and flares.

6 In the document, we have some excellent appendices
7 that really provide a strong background on how we look at
8 noise and how we analyze noise, and it -- it allows someone,
9 especially somebody like me -- I don't claim to be a noise
10 expert -- to be able to understand what we're looking at
11 when we're providing these numbers to you; and as well, how
12 we use chaffe and flare. There's appendices for both those
13 as well and those are good reverses for you to look at.

14 COL. FRANCIS: Did that spark any comment? No.
15 That completely killed my oral comment.

16 MS. JANE PETERSON: I have a question. Would this
17 require more communication sites or --

PT-1

18 MS. PARKER: (Shakes head.)

19 MS. JANE PETERSON: Just curious. Well, I will
20 throw out a few things that I'm going to formally comment on
21 later -- but the chaffe and flare the explanation of that,
22 I'm glad that's in there because --

23 COL. FRANCIS: For the -- for the court reporter,
24 if you could just stand and state your name.

25 MS. JANE PETERSON: Do I have to stand?

□

24

1 COL. FRANCIS: You don't have to stand. If you
2 could just tell her your name and spell it.

3 MS. JANE PETERSON: Jane Peterson,
4 P-e-t-e-r-s-o-n.

5 And I work for the Bureau of Land Management here,
6 and we will be submitting formal comments as part of the
7 process. Some of the things I took notes on include the
8 fact that DNL is not something that I think most people
9 are -- are aware of what that is. Everybody knows what a
10 decibel is. Is the analog rhythmic scale. What is it? How
11 does it relate to -- to how we usually measure noise levels?

PT-2

12 The flares, you know, we're looking at a couple of
13 different proposals going on in the area of the chaffe and
14 flares and air quality. I'm going to be wondering how if --
15 if the air quality that we have now and the proposals that
16 could be becoming in the future will have accounted for not
17 just the actual operations of the planes, but the chaffe and
18 the flare portion of that as well.

PT-3

19 One thing I'm not sure what was in this document
20 is the fact that beyond wildlife that you would expect, we
21 also have a bat migration route, and that could be in this
22 local area as well. So the bats could also -- given the --
23 even the levels of flying, there could be an affect with the
24 bats. These are things I'll be looking at.

PT-4

25 I think it's probably in there, but the local

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25

1 airport, Yellen Field is expanding as well. So just make
2 sure that the expansion was also included for -- before the
3 analysis would be completed. And -- hmm. That's about it.

PT-5

4 MS. PARKER: One thing I would like to add -- I
5 think we discussed this already with somebody else about DNL
6 versus what we call SEL which is Single Event Level, and
7 it's in that noise appendices.

8 MS. JANE PETERSON: Okay.

9 MS. PARKER: Single Event Level is when that plane
10 is flying directly over. That's what you're talk -- that's
11 what you're going to hear about, the term. So you want to
12 know what that noise level is, and there are tables in the
13 appendices that give that for various aircrafts.

14 MS. JANE PETERSON: Good.

15 MS. PARKER: So that might be of some help to you
16 as well.

17 MS. JANE PETERSON: And then because I think
18 everybody should be able to answer this comment because we
19 have to, I'd like to know how you handled global warming and
20 climate change.

21 MS. PARKER: That's a new requirement then.
22 Executive order. Thank you.

23 MS. JANE PETERSON: Over.

24 COL. FRANCIS: Other comments or concerns? Sir?

25 MR. ROM DiCIANNO: I'm Rom DiCianno. I'm a

PT-6

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26

1 resident of Ely. Capital D-i, capital C-i-a-n-n-o.

2 COL. FRANCIS: And your first name, sir?

3 MR. ROM DiCIANNO: R-o-m. Rom.

4 COL. FRANCIS: Please go ahead.

5 MR. ROM DiCIANNO: I have no objection as a
6 citizen here of Ely of what the military wants to do. If
7 they can't express themselves in the United States, in good
8 old white Pine County, where can they go? I was told by the
9 colonel that he had the best of anything that he'd ever seen
10 for geographical points and figures in one mountain range

11 after the other, and he always knew where he was. So I have
12 no concern about the Air Force. In fact, I invite them to
13 do their thing here. I don't know where else they could go.

14 COL. FRANCIS: Okay. Additional comment OR
15 CONCERNS?

16 MR. RON TAYLOR: Ron Taylor. Private citizen. Do
17 you have any --

18 COL. FRANCIS: T-a-y-l-o-r?

19 MR. RON TAYLOR: T-a-y-l-o-r. Talk from the east.
20 Do you have any anticipated needs for using the
21 Ely Airport as an emergency landing field?

22 MS. PARKER: No plan. That wouldn't be part of
23 this proposal.

24 COL. FRANCIS: Okay. This portion of the hearing
25 we're going to -- if anyone wants to make a comment, please

PT-7

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27

1 let me know right now. Otherwise, we're going to be in
2 temporary recess, and we can answer any additional questions
3 for you. The hearing is in recess.

4 (Brief recess.)

5 COL. FRANCIS: Okay. This hearing will come to
6 order. We are back on the record.

7 During the recess, we had a number of people who
8 came forward who now wish to make some additional comments.
9 For those of are that you joining us late, we will allow
10 publicly erected officials to go first followed then by the
11 others in the order which I have received their cards.

12 Please keep in mind that you can provide comments
13 either tonight at the hearing or orally or in writing or

14 throughout the public comment period which goes through
 15 September 29, 2008. If you want to provide additional
 16 comments later on, we will have a slide later on that will
 17 show an address that you can mail those comments to and also
 18 the materials that were provided at the sign-in table.
 19 There should be an address in there to send in comments
 20 later on.

21 Our first speaker will be Lori Carson,
 22 C-a-r-s-o-n.

23 You are the commissioner for White Pine County?

24 MS. LORI CARSON: I am -- I'm commissioner White
 25 Pine County Commissioner, and I'm the vice chair.

□

28

1 COL. FRANCIS: Okay. You can either sit or stand
 2 as you -- as you choose. I'd ask that you speak loudly
 3 enough to -- for the court reporter to hear you. She's
 4 already chastised me so --

5 MS. LORI CARSON: Okay.

6 COL. FRANCIS: She's right behind you.

7 MS. LORI CARSON: Oh, I'm so sorry. I apologize.

8 THE REPORTER: It's not a problem.

9 MS. LORI CARSON: I'm going to be a little
 10 scattered in my comments. This isn't very formal, and I
 11 intend to write it out later. And I didn't want to
 12 duplicate publicly hopefully anything that's already been
 13 said. One the things that I wanted to comment about: That
 14 reading through your draft that there was not yet a -- a
 15 complete socioeconomic analysis in your study for our area
 16 with the airport.

PT-8

17 And I'm sure that it's been touched on already in
18 regards to the gliders. It's noted in there that you will
19 deal with the events, but not necessarily with the
20 individuals. Where these are world class pilots, glider
21 pilots that come in, they will be here sometimes five and
22 six weeks waiting for the right conditions.

23 So it's not necessarily per event. And this is
24 where they come from all over the world to set these world
25 records. Some of the issues that we have that involves

□

29

1 our -- our medical flights, our air ambulances. And 60 to
2 70 percent of those flights will go to Salt Lake. If they
3 have to miss and go around through the MOA, then that adds
4 to the cost. And that gets -- gets tacked on then to the
5 individual that has to be transported.

PT-9

6 So that's a big issue to our community which we
7 have quite a large number of senior citizens here. Another
8 issue would be the -- some of the grant funds. If there's
9 the military that is involved, which may hamper the size
10 that our airport can grow, we have to extend our runway and
11 for the large -- for the larger vehicles -- or the larger
12 aircraft to come in. And if they look at the encroachment
13 from the airlines that they were going to have to go around
14 your military area, then that means that what is the
15 potential for a true growth in our community for our
16 airport? So there may be a down side there for us.

PT-10

17 This last season for the gliders brought in just
18 to the -- to the Ely Jet Center alone at our airport
19 \$35,000. That's just into the airport alone. So if you

20 tack on -- if these people have stayed in the community in
21 our motels and hotels, I don't have the numbers for that.
22 So if you add that up -- food, the lodging, the gas, any
23 incidentals -- you can see there that there's an economic
24 impact. And I understand, too, that what the -- the glider
25 pilots when they come in, I understand that you want a

PT-11

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1 14,500?

2 MS. PARKER: 14,000.

3 MS. LORI CARSON: 14,000, okay.

4 And what these pilots try and do is they get up to
5 the -- the 17 and no more than the 18,000 because that's
6 where you have to have the instruments where the gliders
7 don't, but if they -- as much altitude as they can get,
8 that's where they get their distance for the record setting.

9 So anything over the 18, of course, is going to be
10 impacted by them. But if you start at sea level -- and our
11 airport is at 62,000 -- 6,200 feet -- and then you have, you
12 know, you go up from there. So that's basically and I think
13 that -- James, are you going to speak?

14 MR. JAMES ADAMS: Yes.

15 MS. LORI CARSON: Okay.

16 And he can probably fine-tune a lot of this, also.
17 But aside from the fact that I didn't feel that it was a
18 very complete analysis so far as the economic impact and the
19 fact that the events were just going to be looked at and not
20 the individual when it came to the gliders, I don't think
21 that that gives a complete picture of what really goes on in
22 our community.

PT-12

23 And like I say, I think it's very important, too,
24 to recognize our medical flights that come out of here. And
25 like I said, 60 to 70 percent of them go to Salt Lake. And

PT-13

31

1 then with our new airlines that has come in, we were going
2 to have a stop in Rock Springs, and that didn't happen
3 because of the -- the MOA. So I think that's about it.

4 I apologize for it being scattered. I came in
5 with my thoughts, and it's not very formal. But I'll get it
6 down on paper and do a better job.

7 COL. FRANCIS: Thank you, Miss Carson.

8 MS. LORI CARSON: Thank you.

9 COL. FRANCIS: Our next speaker will be Mr. James
10 Adams who I understand is with the Ely Jet Center.

11 MS. LORI CARSON: Ely.

12 COL. FRANCIS: I'm sorry.

13 MR. JAMES ADAMS: Don't worry. We hear that about
14 ten times a day. I'm going to hang a little thing up here
15 that I want to reference. I wonder if I could stick it
16 right on the edge of the black. Would that bother that?

17 MS. PARKER: No, I don't care about that.

18 MR. JAMES ADAMS: I'm glad.

19 MS. PARKER: It's -- it's not ours.

20 MR. JAMES ADAMS: No wonder she doesn't care.

21 MS. PARKER: Just tell them you did it.

22 MR. JAMES ADAMS: You can blame me. I am James
23 Adams. I represent all kinds of stuff. I'm a Ely Jet
24 Center manager. I'm the manager for Ely Soaring. System
25 manager for the airport. We handle the airline locally for

1 representation. So I'm involved in a lot of different
2 things. I -- I tried to put this little thing together to
3 use as a reference, but first, I want to start off --

4 COL. FRANCIS: Sir, before you go, is that
5 something that you're going to be able to leave with the Air
6 Force representatives?

7 MR. JAMES ADAMS: Sure.

8 COL. FRANCIS: Or make a copy for them?

9 MR. JAMES ADAMS: No problem at all. Anyway, it
10 isn't necessarily to scale, and Jerry and I've been
11 wrangling over trying to get this lower line particularly
12 and some of this in. So that was done rather quickly.
13 Anyway, I wanted to start off by saying we are not
14 anti-military. We love the military guys. The -- speak to
15 the Boise and I'm going to say something profane here -- the
16 Army National Guard out of Boise and the guys out of
17 Carson/City Reno come through our airport regularly with
18 helicopters and the Apaches and all kinds of stuff. And we
19 barbecue for them.

20 We feed them every time they come because we
21 really like the military. We appreciate what you guys do
22 for us, not only here in the U.S. but overseas. And so as a
23 company, we love you guys. Okay? So don't ever take any of
24 this as, "Oh, man we're trying to restrict you guys." We
25 will try to support in any way, shape, or form.

1 But in this, one of the things that I've been
2 looking at as we've wrestled with this -- and Jerry and I've
3 wrestled with this in my office over the years -- and what
4 we want to do is find a solution that addresses all of the
5 needs. Not just White Pine, you know, get out of here guys,
6 you're messing up with our airspace. No, we want to find a
7 way to make it work for you guys, but yet also make it work
8 for us as a community and as an airport.

9 So some of the things I'd like to address. Lori
10 touched on a little bit. I'm very involved in managing and
11 operating. I'm the tow pilot for most of the soaring
12 operations during the -- the summer. But Ely has become a
13 world class glider spot. Not just U.S. world class.

14 We were rated for the third time in a row, third
15 year in a row, number one spot in the world. And so it's a
16 big thing. And we get gliders that come from -- and pilots
17 come from every continent in the world. All over the world.
18 And most of the people that come to Ely are your world class
19 kind of guys. A lot of them are ex-world champions and
20 everything that goes with that simply because what we offer
21 in Ely, they say it's the only spot in the world that gives
22 what you guys give.

23 And with that in mind, this area in here, they
24 come to Ely, first of all, because they set world records.
25 Ely has a number of world records even more national

□

1 records, state records and everything that goes with it and
2 they come here for that reason. They come to set records.
3 They want to fly high, they want to fly fast, and they want

4 to fly far. Last year, before Steve Fossett disappeared, he
5 set another world record in Ely, 1,250K triangle a speed
6 record in a closed record VA triangle.

7 For those of you who do not understand a thousand
8 K triangle in or a thousand K trip in a glider is equivalent
9 to somebody running a marathon. It's what runners want to
10 get to. Ely -- they're disappointed when they don't get a
11 thousand K in a day.

12 That's the kind of -- of soaring we have in Ely.
13 High altitude translates into speed. So the typical day in
14 Ely, these guys are flying between 17- and 18,000 feet.
15 That's where they want to be. That's where they soar at.
16 They get their best speed. They get their greatest
17 distances that way.

18 This is kind of a perception of -- for those of
19 you who may not understand, I know you that guys that fly
20 know these -- these all represent military and restricted
21 areas presently surrounding Ely. Starts out here. This is
22 going to those other Navy kind of guys over at Fallon. This
23 borders some of Fallon, goes up into Mountain Home --

24 COL. FRANCIS: For the record, you're pointing to
25 this map that you're going to leave with the Air Force

□

1 representatives --

2 MR. JAMES ADAMS: Yeah.

3 COL. FRANCIS: -- is that the --

4 MR. JAMES ADAMS: This is the very western edge of
5 Nellis -- not Nellis, but Fallon.

6 COL. FRANCIS: Okay.
Page 31

7 MR. JAMES ADAMS: This one down here represents
8 Nellis.

9 COL. FRANCIS: And would that be the southern edge
10 of the map?

11 MR. JAMES ADAMS: Southern. Ely sits right here.
12 This is Ely. This is all of you guys' current military
13 operation and restricted area over here Seiver and
14 everything there.

15 COL. FRANCIS: That's the area to the east of us.

16 MR. JAMES ADAMS: That's to the east of us.
17 Directly to the east of our airport. This pink line here
18 kind of represents roughly, not to scale, what is being
19 proposed as the White Elk Military Operations Area. Ely
20 lies directly south of it. This area right between these
21 two big mountains -- this is the Egan Mountain Range, this
22 is the Shell Creek Range here, this is known as the Steptoe
23 valley right up here.

24 This is the normal glide path. This is their
25 number one spot. They take off out of here. We'll drop

□

36

1 them in this area here. They will often travel down. Some
2 of them will go clear down over the Grand Canyon which is
3 right down in here. They will come across south of
4 Las Vegas. Come up over here. Come back in over Tonopah
5 which is setting down here. They will also commonly run to
6 Jackpot which is this one up here. So they'll come up
7 across through here and come down and run back in down
8 through here.

9 This is one of our biggest areas for glider

10 soaring is this north/south route right up and down Steptoe
11 which will be right in the middle of the proposed MOA. So
12 again, we're talking 17- to 18,000 is what these guys are
13 looking for. Okay? Some of the other stuff that goes on
14 with the glider world, if -- if you aren't aware.

15 Gliders normally do not have transponders.
16 Transponders for the non-aviation is a little box that sets
17 in there that radar picks up and it -- little bleeps, tells
18 where that particular ship is traveling, directions
19 everything else, altitude. Gliders rarely have
20 transponders. Okay? They're flying out here in open space
21 running up and down through here.

22 Gliders are also very hard to pick up on radar.
23 very hard to pick up. You probably heard of the accident
24 where that Hawker 800 collided with a glider over south of
25 Reno. Radar didn't even know he was there. Two of them

PT-14

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37

1 glider Hawker descending into Reno. Glider was playing
2 around south there by Minden. "Phtt." Collided.
3 Fortunately, everybody lived. So this is a common thing
4 that goes --

5 COL. FRANCIS: If you're done with that, you can
6 probably just lay it down.

7 MR. JAMES ADAMS: Well, we're going to make a
8 little bit of reference on and on. Oh, well, maybe we
9 won't.

10 Anyway, this is the world in which these glider
11 guys come. What's the impact on it? First of all, if
12 they're restricted to 14,000 feet, they're not going to fly.

PT-15

13 They aren't going to come. The glider community more than
14 anything else with this proposed MOA will be felt the
15 hardest. It will be the biggest disaster for that group of
16 people.

17 We want to have gliders here. The economic impact
18 to this community, they shell out about 50,000 -- between
19 30- and 50,000 every year directly for their soaring
20 operation. That does not include most of them stay in
21 motels. They eat out. They buy groceries. They buy gas.
22 They buy all of this stuff that's pouring into this
23 community. So some of the glider guys that they use that
24 formula three times, could be anywhere from a hundred 50 to
25 \$250,000 impact.

PT-16

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1 I will guarantee you that if these guys are
2 restricted to not be able to use this, they will leave.
3 I've already heard it from them. We've talked about it
4 every summer since this -- this is their number one issue.
5 They say if we are restricted to below that 14,000 feet,
6 we'll find another place to go. Okay?

PT-17

7 The other thing that goes with it is the
8 airline -- I think Lori alluded to it -- Rock Springs, one
9 of the first proposals Great Lakes made to us is that they
10 were going to connect us with Rock Springs. Rock Springs is
11 about right here (indicating). That scrapped that, and now
12 we are going between Moab which is down over here about
13 right out in here simply because they did not want to deal
14 with the military existing, not what's proposed, but what's
15 already existing in Military Operations Area.

16 Airlines cannot fly through restricted areas.
17 They cannot fly through active MOAs. Passenger hauling.
18 Don't do it. So they said well, we're going to find a
19 different route. So they're going to come down and around
20 now and avoid that area, total. I don't think it impacted
21 us much in negatively, but Rock Springs sure didn't like it
22 because they were looking for a connection maybe possibly
23 going on down into Vegas.

24 The airlines also -- presently, the last airline
25 we had, if we look at this map again, because of the

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1 southern military which is again in existence already, this
2 pink line south is how they went to Vegas. They come out of
3 Ely, come down here to Wilson Creek VFR, go down here to
4 Beryl Junction which is on the outside edge of the military
5 operation area, went around it and then back down into
6 Vegas.

7 what that does is that translates into more air
8 time, more costs, more effective stuff for them. What is it
9 going to do to Ely? I'm not sure. At best, it will raise
10 our tickets because there's more air time involved and they
11 are planning on running a south route. They're wanting to
12 get into Vegas. But right now, we've got Vegas problems.

13 Also, what happens to it is is the airlines, if
14 they get more and more boxed in around Ely, we've talked
15 about going to Salt Lake. Great lakes said no. They didn't
16 want to have to deal with it. So is it in the future when
17 the EAS contracts come up? The amount of airlines that's
18 going to bid? Is that going to lower? I don't know. These

19 are economic things we don't know.

20 It's going to make it more difficult for the
21 different options and then the other thing is is just higher
22 costs, in general. And where does that go? Right on into
23 the ticket sales. Ticket sales get to the point which we
24 saw with the increase in fuel prices this summer. Nobody
25 flew. They drove.

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1 So there is a -- a possible effect there. Also,
2 all your approaches. Now I am glad and Jerry helped me
3 here. You guys have moved and modified the bottom end of
4 this proposed MOA, which I am thankful for, because we are
5 trying to expand our runway which was going to even more
6 encroach as we moved approaches. One of the desperate
7 things we need at this little airport is a precision
8 approach.

9 Right now, our MEAs and stuff decision heights for
10 approaches is 1,400 feet, basically VFR conditions. We lost
11 several flights during the airline last winter because they
12 could not get down. So we are begging the FAA, give us a
13 precision approach into here which we've got to have far
14 enough distance north, which now I think that won't be
15 affected, which I'm thankful for, to get us a precision
16 approach, start on that initial approach fix and get us back
17 down here and help us out. That is something that we
18 really, really desperately need.

19 I do know the FAA funding. We've worked with them
20 for years. The FAA look at airports and they see the
21 potential future at the airport, and they say if they

22 airport doesn't have a big future because it's all boxed in
 23 or it's in the middle of the city, or whatever. Guarantee
 24 you the funding goes like this (indicating). They aren't
 25 going to invest in something that they can't get a return

□

41

1 out of it.

2 Some of the other things that are involved with
 3 that -- well, we'll scratch those. Jerry, you're taking
 4 away some of my points here. Okay.

5 Because our current arc, the way we have it, the
 6 original MOA proposal, we were clear up into it. So Jerry
 7 took that one away from me. I appreciate that.

8 The other thing is is dealing with, very quickly,
 9 the -- the medical and Lori touched on that. About 50,
 10 60 percent of our medical flights go towards Salt Lake. We
 11 get U of U in here. We get American Medflight. We get the
 12 LES planes. They all fly in and out of there.
 13 Occasionally -- and I will say that Clover control is
 14 generally -- I fly myself -- Clover control has been
 15 wonderful to work with.

16 But when you guys are hot and active, I get calls
 17 from the med guys saying, hey guys, I need some fuel tonight
 18 because we had to go around the military range because
 19 they're operating, and we aren't going to be able to get
 20 back. We need some fuel, particularly with the helicopters
 21 they bring in. And they do bring in about 10 percent of the
 22 flights are helicopters. So that will have an affect.

23 And as it says, the farther that they fly -- it's
 24 just like an airline -- the farther that these guys fly, the

PT-20

25 more the cost will pass on down to that passenger flying on

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42

1 board. And it's expensive the way it is. I had a friend
2 just recently took that flight, cost ten grand, and it's all
3 based upon how long of time that plane was in the air.

4 So we can have some problems there. GA traffic.
5 In closing, they're those pesky guys that go out and fly
6 without radios and do all kinds of goofy things which I
7 won't justify most them. But I have to tell you the average
8 GA pilot when they see Military Operation Area, go hun? I
9 ain't going there.

10 Yes, there is an educational problem. But you can
11 educate these guys all day long, and they just aren't going
12 to do if anyway. I talk to probably three to four of them a
13 week trying to get them to go south through the MOA, stay
14 east of 93, it's military operation. Get on with Nellis.
15 They'll talk you through it. And they ain't going there.
16 They just won't go.

17 So it's like a big stop sign. Again, most of our
18 north/south traffic goes right up Steptoe Valley, right
19 smack on up. They go up. They hit Wendover or Wells. They
20 run up. They hit Jackpot and then they go up to Twin Falls
21 and then they kind of go east and west if they're going from
22 there.

23 It is going to probably have a certain amount of
24 effect on those guys, even though you maybe are proposing
25 14,000. In the summer, because of turbulence, most of these



□

1 guys get up into the 17-, 18,000 category to try to get
2 above the rough weather because of our mountains.

PT-21

3 And they run a lot of oxygen during that time.
4 And this MOA is going to be right -- right in the middle of
5 them. In kind of concluding -- again, we're not -- we're
6 guessing at stuff. Is this MOA going to be a negative
7 impact if it comes down -- if it stays at 14,000 feet or
8 14.5? None us can guess. I can't guess. I can only
9 assume.

10 But I'm going to tell you I'm going to assume on
11 the -- on the worst case scenario. I have to. My
12 businesses are supporting and dependent upon it. This
13 community, this airport is dependent upon it. I know we've
14 had the discussion. Jerry, 18,000 feet begins positive
15 airspace. And guess what? It's not going to effect any of
16 the -- 90 percent of our people that come through.

17 So my thing is is: Can we get up it to 18,000 for
18 a floor? If we do, you're in positive control. You've got
19 to fly IFR up there. It's going to eliminate a lot of the
20 issues that my people are complaining about.

PT-22

21 The gliders are going to go away as far as
22 complaining. The general aviation traffic is going to go
23 away. There's going to be a lot of issues solved if we can
24 do that. I don't know what's going to happen here. None of
25 us can forecast the economic impact of this community. None

□

1 of us. I know in the report it hasn't.

2 My question is: I mean, if there is a negative
 3 economic impact to this community, serious economic impact,
 4 is the military willing to pay for it? Are they willing to
 5 fund this airport? Are they willing to fund the loss of
 6 revenue that would be lost or the potential loss in the
 7 future if we can't develop this airport where we need it to
 8 be? I don't know. But that's a question I have.

PT-23

9 All I know is until we understand those negative
 10 impacts -- and there will be some, maybe not many, and I
 11 hope not many -- how are we going to go ahead with this
 12 considering a community's economic development, an airport's
 13 economic development, and quite a few other things that are
 14 dependent upon it -- might possibly -- might possibly be
 15 wiped out?

PT-24

16 I don't have those answers. But I wanted to bring
 17 that forward as a public discussion. I know I visited it at
 18 length with a couple today about these same issues. I want
 19 to find a solution. Our airport wants to find a solution.
 20 Our glider people want to find a solution. We want to find
 21 a solution that is equitable for everyone. We are not
 22 saying don't build a MOA. Don't come to our area. Don't be
 23 around. Let's just find a way to mitigate the damage as
 24 little as we possibly can.

25 COL. FRANCIS: Thank you, Mr. Adams.

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1 Our next speaker is Mr. Walter -- I'm probably
 2 going to not pronounce this correctly.

3 MR. JAMES ADAMS: -- Leianke.

4 MR. WALTER LEIANKE: Uh-huh.

5 COL. FRANCIS: It's spelled L-e-i-a-n-k-e.

6 Mr. Leianke, you have as soft a voice as I do, so
7 if you would please keep in mind the court reporter when
8 you're speaking.

9 MR. WALTER LEIANKE: Right. I won't take as much
10 time as James did because I'm not going to go into that kind
11 of detail. I moved here six, seven years ago, not because
12 Ely is a nice little town tucked away in a very beautiful
13 Steptoe Valley. One of my primary reasons was because it
14 has a nice airport and it wasn't sandwiched in between a lot
15 of MOAs and restricted areas because I'm one of these
16 Nervous Nellies that James mentioned. I'm a nail biter when
17 it comes to flying in an MOA. I know you can radio ahead
18 and find out if it's a hot area or a cold area, but I'm
19 still going to be biting my nails the whole time.

20 With this new MOA, it cuts off the whole Steptoe
21 Valley which I've been looking forward to flying in. It
22 also cuts off access into the neighboring valley to the --
23 to the west. It doesn't completely eliminate it, but it
24 makes it a little bit more difficult to get into. Like
25 James, I'm not anti-military. If you saw the paint job I

PT-25

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46

1 just put on my home-built airplane that I just finished,
2 you'd know I was not anti-military. Stars and stripes all
3 over the thing.

4 To that degree, I'm unhappy about this MOA. I
5 just wish it could go someplace where there wasn't an
6 airport, where there wasn't a lot of local traffic, and that
7 sort of thing. But you guys know more about that than I do.

PT-26

8 Make it as flyable as you can because I know you're not
 9 going to go away.
 10 That's all I have to stay. Thank you.
 11 COL. FRANCIS: Thank you, sir.
 12 Those are all of the cards I've received for
 13 speakers.
 14 Is there anyone else that would like to make some
 15 comments this evening?
 16 MR. WALTER LEIANKE: You talking to me?
 17 COL. FRANCIS: Those are all the cards I've
 18 received.
 19 Is there anyone else that would like to make any
 20 comments this evening? Again, you can either do it orally,
 21 in writing, or if you want to provide comments later, you
 22 can do that throughout the public comment period which runs
 23 through September 29, 2008.
 24 Miss Carson?
 25 MS. LORI CARSON: Pardon me?

□

47

1 COL. FRANCIS: Anything further?
 2 MS. LORI CARSON: No I thought that James did a
 3 good job. And I -- I agree, we're not anti-military. It's
 4 just that, you know, when you're dealing with a community --
 5 white Pine County, there's 10,000 people here total.
 6 95 percent of our land is -- is public, and now if we have
 7 with encroachment on our airspace, I mean, our -- our tax
 8 base is so small, so any revenue, you know, is just where
 9 don't jeopardize our revenue streams.
 10 If we can make this a win/win, you know, that'd be

PT-27

11 great. But don't jeopardize our revenue stream.

12 COL. FRANCIS: Additional comments?

13 MR. JAMES ADAMS: I'll add one more real briefly.

14 COL. FRANCIS: Mr. Adams.

15 MR. JAMES ADAMS: As it relates to the glider
16 community: Because this has been such a world-renowned
17 place, one of the things that we have been asked to do is
18 host the national competition. I -- I mean, we're talking
19 65 gliders in a ten-day period, probably 200- to \$300,000
20 revenue. It will be a logistics nightmare. But that's
21 speaking from my own stand point.

22 But it's a huge boom for the area. I will -- and
23 the way they select areas is the host site, which would be
24 us as the airport: Do they have a facilities, do they have
25 the logistical capabilities and then thirdly is is what does

PT-28

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1 the surrounding area offer the pilots? well, that's a --
2 that's a no-brainer. We're world class.

3 The issue is with this MOA, especially if it's
4 running at 14,000 feet, will probably drop us out of the
5 competition. They will probably eliminate us. And, you
6 know, I don't know. I know from the community, and I know a
7 lot of the glider guys. They really want like crazy to come
8 here and have a national because the records we would set on
9 that national competition would raise the bar so high.
10 They're all kind of drooling for it. But, you know, with a
11 14,000 MOA taking out our prime glider spot up that valley,
12 I -- I seriously doubt we'll get it. They'll take it
13 elsewhere.

PT-29

14 COL. FRANCIS: Okay. Does that spark any
15 additional comments or concerns? Okay.

16 Once again, we'll be in recess, and we'll be
17 glad -- the Air Force representative will be glad to talk
18 with you some more during recess.

19 (Brief recess.)

20 COL. FRANCIS: Okay. This hearing will come to
21 order. During the recess, no further speakers came forward
22 requesting to make additional comments this evening. I
23 would remind everybody that's here, though, that you can
24 still continue to make comments throughout the public
25 comment period which, again, runs through September 29,

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1 2008. The address that you can mail your comments to is on
2 the slide and in the materials that we made available to you
3 this evening. One last chance.

4 Are there any further comments that anyone would
5 like to make? Very well. Thank you for coming.

6 This hearing is adjourned.

7 (The hearing adjourned at 7:59 P.M.)

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1 STATE OF NEVADA)
2)ss
COUNTY OF CLARK)

3 I, the undersigned, a Certified Shorthand Reporter
4 of the Sate of Nevada, do hereby certify:

5 That the foregoing proceedings were taken before
6 me at the time and place herein set forth; that any
7 witnesses in the foregoing proceedings, prior to testifying,
8 were duly sworn; that a record of the proceedings was made
9 by me using machine shorthand which was thereafter
10 transcribed under my direction; that the foregoing
11 transcript is a true record of the testimony given.

12 Further, that if the foregoing pertains to the
13 original transcript of a deposition in a Federal Case,
14 before completion of the proceedings, review of the
15 transcript [] was [] was not requested.

16 I further certify that I am neither financially
17 interested in the action nor a relative or employee of any
18 attorney of any of the parties.

19 IN WITNESS WHEREOF, I have this date subscribed my

HEAR0902

20 name.

21 Dated:_____

22

23

DONNA J. RUDOLPH, NV CCR No. 420
CA CSR NO. 9652, RPR

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PUBLIC HEARING
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR PROPOSED WHITE ELK MILITARY OPERATIONS AREA
ELKO, NEVADA
SEPTEMBER 3, 2008

Reported by:
Donna J. Rudolph, RPR, CCR No. 420
CA CSR No. 9652
Job No. 94477

□

1 APPEARANCES:
2

3 AIR FORCE REPRESENTATIVES:

4 Sheryl Parker, Air Combat Command White Elk MOA
Lt. Colonel David Francis, JAG
5 Lt. Colonel Bill Lyons, 419th Fighter Wing
Elliott Sanders, Headquarters Air Combat Command
6 Airspace and Ranges
Jerry Angus, Airspace and Aircraft Operations
7 Sr. Airman Brok McCarthy, Public Relations
Barbara Fisher, Public Relations

8
9 TEC, INCORPORATED:

10 KEVIN J. PETER, Principal/Office Manager
DAVID A. JETT, Program Director
TAMARA SHAPIRO
11 CHAREE D. HOFFMAN

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1 LAS VEGAS, NEVADA; WEDNESDAY, SEPTEMBER 3, 2008

2 6:04 P.M.

3

4 AIRMAN MCCARTHY: I would like to welcome everyone
5 to the Draft Environmental Impact Statement public hearing

6 for proposed White Elk Military Operations Area, or White
7 Elk MOA. I would like to take this opportunity to introduce
8 the Air Force representatives who will be either moderating
9 or presenting this evening.

10 First, Miss Sheryl Parker, the Air Combat Command
11 White Elk MOA Environmental Impact Statement or EIS Project
12 Manager and Colonel David Francis, the hearing judge. I
13 would now like to ask Colonel Francis to begin the formal
14 portion of our hearing meeting.

15 COL. FRANCIS: Ma'am, can you hear me okay?

16 THE CROWD: Yes.

17 COL. FRANCIS: You're our sole customer tonight.

18 MS. PARKER: You're our sole person. So don't
19 leave.

20 COL. FRANCIS: If you can't hear me, I have kind
21 of a soft voice and --

22 THE CROWD: Okay. I can move up.

23 COL. FRANCIS: Because we have so few people here
24 tonight, ma'am, we're going to be a little more informal
25 than we otherwise would, but there are some things we have

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4

1 to cover for the record so I'll kind of go through those.
2 Just bear with me, it seems like, just a moment.

3 As indicated, I'm Colonel Dave Francis and I'll be
4 the hearing officer for this evening. The purpose of this
5 hearing is to comply with the National Environmental Policy
6 Act and the regulations promulgated by the council of
7 environmental quality. We're here this evening to receive
8 public comments, your comments if you'd like to make them on

9 the draft environmental impact statement for the white Elk
10 MOA.

11 I'd like to explain my role in this hearing. I'm
12 a full-time military judge in the Air Force Court of
13 Criminal Appeals in Washington, D.C. I'm not assigned to
14 Hill Air Force Base or Air Combat Command which are the
15 primary Air Force entities that are associated with this
16 proposal.

17 I have not been involved in the development of the
18 Draft EIS. I'm not here to act as a legal advisor to the
19 Air Force representatives for this proposal. Rather, my
20 role is simply to make sure that everybody gets a chance to
21 speak, has the opportunity to do so so that we have a fair
22 and impartial hearing.

23 We're going to conduct the hearing in two parts:
24 First, Miss Parker who you may have met outside is going to
25 make a presentation on the background on the proposal. She

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1 will also cover very briefly the National Environmental
2 Policy Act requirements with respect to the draft EIS and
3 then we'll summarize for you the findings of our
4 Environmental Impact Statement for this proposal.

5 After Miss Parker's presentation, you'll have the
6 opportunity to make comments if you want to. The input you
7 give will provide the decision-makers for the white Elk MOA
8 the benefits of your knowledge of the local area and will
9 make sure they are aware of any concerns that you may have
10 about the Draft Environmental Impact Statement analysis.

11 I know when you came in, you were asked to

12 register and fill out a card in case you wanted to make
13 statements. Did you want to make a prepared statement
14 tonight?

15 THE CROWD: Not in the hearing mode.

16 COL. FRANCIS: Okay. Well, there are a couple
17 other ways you can do it. Obviously, you could speak this
18 evening if you wanted to and have it reported by our court
19 reporter. You can also provide comments in writing either
20 here tonight by leaving it with one of the Air Force
21 representatives or you can submit them via the mail. Later
22 on, we'll supply it by having a mailing address for you.

23 You can provide comments to the Air Force that way
24 through the end of the public reporting period which ends on
25 September 29, 2008; so you've got that amount of time to

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6

1 submit any additional comments you want to.

2 If you picked up one of the brochures we have out
3 on the table, the address is also on the inside cover and on
4 the back cover. If you haven't gotten one of those, when
5 you came in, grab one on the way -- your way out. I think
6 at this point at this point, we'll let Miss Parker begin
7 with her presentation.

8 MS. PARKER: I'll look at everybody in the
9 audience so you don't feel like I'm staring -- I'll just
10 pretend like all these other people are a part of it, too.

11 I'd just like to thank you for coming out to the
12 public -- public hearing. We're actually holding three
13 public hears this week. The first one was last night in
14 Ely, Nevada. This one tonight at Elko, and Thursday we will

15 be in West Wendover, Nevada.

16 We are holding these meetings in locations that
 17 lie near the proposed White Elk Military Operations Area and
 18 the affected areas. Before we go any further, I'd like to
 19 introduce some of the people that we have representing the
 20 Air Force. Also provide you with a brief description about
 21 the proposed White Elk Military Operations Area, review the
 22 National Environmental Policy Act, and then follow this with
 23 a brief overview about the draft EIS analysis and the
 24 findings.

25 Our hearing officer, Colonel David Francis, will

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1 then outline how the public hearing will be conducted to
 2 ensure that everyone has a chance to comment. As I
 3 mentioned earlier, my name is Sheryl Parker, and I am joined
 4 this evening by Colonel David Francis who's the hearing
 5 officer, and he will be facilitating the meeting. In the
 6 display area and here in this public hearing room, we are
 7 joined by Hill Air Force Base personnel that are intimately
 8 familiar with the base and Utah Test and Training Range
 9 operations.

10 We have Jerry Angus who is the Hill Air Force Base
 11 airspace manager. We have Lieutenant Colonel Bill Lyons who
 12 is with the 419th Fighter Wing out of Hill Air Force Base.
 13 We also have Brok McCarthy and Barbara Fisher who are out of
 14 the public affairs office at Hill Air Force Base.

15 Also here this evening, we have Mr. Elliott
 16 Sanders who is out of Langley Air Force Base, along with me,
 17 and he's out of the Airspace and Ranges Office at Langley.

18 And we also have representatives from TEC which is the
19 company that is assisting us in doing the environmental
20 impact analysis.

21 And we are here this evening to gather comments on
22 the draft Environmental Impact Statement concerning the Air
23 Force's proposal to establish a new Military Operations Area
24 linked to the existing Utah Test and Training Range.

25 The proposed white Elk MOA would underlie existing

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1 UTTR airspace consisting of the Currie/Tippet air traffic
2 control assigned airspace. I'm going to call that ATCAA
3 from now on because it's much easier to say. The white Elk
4 MOA would extend from 14,000 to 18,000 MSL or mean sea level
5 and the ATCAA currently extends from 18,000 mean sea level
6 to 58,000 mean sea level.

7 The 388th Fighter Wing which also includes the
8 419th Fighter Wing which Lieutenant Colonel Lyons belongs to
9 would conduct ready air crew program and other training in
10 this piece of airspace. This training would include the use
11 of chaffe and flares in the MOA as well as the existing
12 ATCAA and supersonic flight operations in the Currie/Tippet
13 ATCAA above 18,000 mean sea level.

14 The purpose of and the need for the white Elk
15 Military Operations Area is to provide the 388th and 419th
16 fighter wings with consistent and reliable training airspace
17 to ensure that they are combat ready. The combat readiness
18 requires training airspace configured and sized to allow
19 pilots to practice current tactics at supersonic speeds and
20 make full use of the F-16's capabilities.

21 However, scheduling priorities and access
 22 limitations currently on UTTR prevent the 388th Fighter wing
 23 and the 419th from accomplishing all the required training
 24 they need. And NEPA requires that agencies like the Air
 25 Force and BLM and forest service also evaluate the no-action

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1 alternative in comparison to the proposed action. And what
 2 the no-action would mean under this proposal is that the
 3 proposed action, in other words, the establishment of the
 4 Military Operations Area would not occur.

5 Under the no-action alternative, the white Elk MOA
 6 would not be established, supersonic activities in the
 7 Currie/Tippet ATCAA would not occur, and no chaffe and flare
 8 would be used in the airspace. It also would mean that the
 9 388th Fighter wing and the 419th Fighter wing would not be
 10 able to achieve all of its training requirements, and this
 11 limitation would affect the combat readiness of these
 12 pilots.

13 Under the proposed action, the white Elk MOA
 14 would -- would overlies portions of the white Pine and Elko
 15 counties and northeastern Nevada. The -- the airspace would
 16 be used by the 388th and the 419th and to a lesser degree
 17 other Air Force and Navy aircraft. This MOA would underlie
 18 and generally align with the Currie/Tippet ATCAA so that the
 19 two units could be scheduled and used together.

20 This map up here depicts the boundaries of the
 21 current ATCAA and the proposed Military Operations Area.
 22 Horizontally the boundaries would match those of the
 23 overlying Currie/Tippet ATCAA on the north, the east, and

24 most of the west.

25 The new White Elk MOA would extend from 14,000 to

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1 18,000 mean sea level. The ATCAA extends from 18,000 to
2 58,000 feet mean sea level. And as I pointed out, you'll
3 notice that the MOA underlies the majority of the
4 Currie/Tippet ATCAA with that the exception of that
5 Southwest corner.

6 The Air Force recognizes the need to maximize the
7 training time and to minimize the transit time for the 388th
8 and the 419th fighter wings. Having to fly long distances
9 to remote training airspace and return to Hill would
10 substantially limit their training time. So the Air Force
11 sought to identify existing airspace within a flying radius
12 limit of a hundred 50 nautical miles of Hill Air Force Base.

13 The western portion of the Utah Test and Training
14 Range complex containing the Currie/Tippet ATCAA lies
15 between a hundred 20 and a hundred 40 nautical miles from
16 Hill Air Force Base. That's within the required distance
17 threshold. Flying to other locations like the Nevada Test
18 and Training Range and Mountain Home range complex in Idaho
19 would expend flying hours and provide minimal, if any,
20 combat training.

21 To evaluate the potential locations for the
22 airspace, the Air Force conducted preliminary research and
23 consulted with the Federal Aviation Administration. A
24 search of the area adjacent to and surrounding the Utah Test
25 and Training Range for a block of airspace revealed

1 potential conflicts with airports, jet routes, approach and
2 departure paths, and other components of civil aviation,
3 north, south, and east of the Utah Test and Training Range.
4 To the north and the northeast of UTTR, any new airspace
5 would impede substantial -- would impede substantially on
6 commercial air traffic above 20,000 feet mean sea level.

7 The FAA informed us that in particular, commercial
8 air traffic from Atlanta, Dallas/Ft. Worth, Houston, Denver,
9 and Memphis to Seattle would be impeded and flights from
10 Boston, New York, Chicago, and Minnesota to Oakland also
11 transit these areas. Now, areas directly east of Hill Air
12 Force Base and the Utah Test and Training Range airspace
13 would also pose conflicts to commercial -- with commercial
14 aviation.

15 To the south and the southeast, all commercial air
16 traffic coming from the east, southeast, and south to Salt
17 Lake City transit the area. Far less traffic occurs to the
18 west of the Utah Test and Training Range. The western side
19 of UTTR lies in what we call an airspace shadow of the
20 existing UTTR where less civilian and commercial air traffic
21 currently occurs. And this shadow results from UTTR
22 preventing east to west and west to east traffic --
23 commercial traffic and the absence of any large metropolitan
24 areas with airports.

25 Okay. Now that I've outlined the proposal, I just

1 wanted to provide you a little bit of background as to why
Page 10

2 we're conducting these meetings and what stage we're at
 3 right now in the National Environmental Policy Act. The
 4 National Environmental Policy Act requires all federal
 5 agencies, like I said earlier, to consider the effects of
 6 their actions on the natural and the human environment.

7 And the Act also requires that we document and
 8 analyze these impacts that could occur due to the proposal
 9 and that we provide these impacts to the public. The Act
 10 also calls for the public to be involved in identifying any
 11 potential alternatives to the proposed action and also
 12 provides for a process where the public can provide their
 13 issues and concerns within the proposal -- with the
 14 proposal.

15 This slide actually outlines the National
 16 Environmental Policy Act process. That started in November
 17 of 2007 for this particular project with the publication of
 18 a notice of intent in the Federal Register. We also
 19 announced the intent to start this process in local
 20 newspapers and conducted scoping in December of 2007.

21 This scoping period included meetings in
 22 communities, and written comments were requested and
 23 received. Thereafter, preparation of the -- the
 24 Environmental Impact Statement began. The next step in the
 25 environmental impact analysis process included an

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1 announcement in the Federal Register and again in local
 2 newspapers of the draft EIS's availability. And this was
 3 done in the Federal Register on the 15th of August of 2008,
 4 and it officially marked the beginning of the public comment

5 period.

6 As part of the open disclosure of the proposal's
7 potential impact, we are -- we have provided copies of the
8 draft Environmental Impact Statement to federal agencies,
9 state and local entities, national and state-elected
10 officials as well as the public who have requested copies
11 since this process began.

12 The comments we received during this comment
13 period will then be used in preparation of the final
14 Environmental Impact Statement which we anticipate being
15 published around January of 2009. And following the final
16 EIS publication, there's going to be a 30-day waiting period
17 before any record of decision can be signed.

18 Again, the Federal Register will announce this
19 decision, and a public notification of the decision will be
20 announced in local newspapers. That then is a short
21 description of the NEPA process.

22 And now I'd like to briefly present an overview of
23 the potential impacts that could occur as a result of the
24 proposed White Elk MOA, and then if you change your mind and
25 you want to comment, you can go ahead. Or if anybody else

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14

1 comes, like last night. They can comment as well.

2 THE CROWD: I'm going to ask a question.

3 MS. PARKER: Oh, that's fine, too. We may not be
4 able to answer it here tonight.

5 THE CROWD: After you issue your decision, is
6 there any kind of a --

7 MS. PARKER: Appeal process? Not like BL- --
Page 12

PT-30

8 unlike BLM --

9 THE CROWD: Not like BLM?

10 MS. PARKER: There's a court process, but there's
11 not a appeal process in our -- in our actual code of federal
12 regulations that allow for --

13 THE CROWD: Administration.

14 MS. PARKER: Exactly.

15 The Air Force used comments that we received from
16 scoping as well as elements of the proposed action to define
17 potentially -- the potentially affected environment.
18 Through this process, we identified nine resource areas
19 shown here ranging from noise to environmental justice. And
20 what -- what follows is just a brief summary of the draft
21 EIS findings regarding the environmental impact to these
22 resource areas.

23 The white Elk MOA would overlies 1,674 square
24 nautical miles and underlie all but the southwestern portion
25 of the existing Currie/Tippet ATCAA which covers 1,993

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15

1 square nautical miles. With the addition of the white Elk
2 MOA, the volume of the Utah Test and Training Range airspace
3 would increase by about 1.4 percent. F-16s currently fly in
4 the Currie/Tippet ATCAA, however, supersonic flight and the
5 use of chaff and flare is not permitted.

6 In 2007, there were 548 sortie operations flown in
7 the ATCAA. Under this proposal, the number of annual sortie
8 operations in the combined MOA and the ATCAA would increase
9 to no more than 9,590. Most, in other words, 96 percent of
10 these operations would be conducted by the F-16s from Hill

11 Air Force Base. And of that, 85 percent of the time that
12 they're flying, it would still be in the current ATCAA.

13 The other 15 percent of the time that they fly
14 would be in the proposed Military Operations Area, which
15 amounts to about five sorties per day of the 260 flying
16 days. Now that would be anywhere within that Military
17 Operations Area.

18 Supersonic flight would occur and training chaffe
19 and flares would be used during the training sortie
20 operations. It is anticipated that there would be little
21 impact on civil and commercial aviation, and through the
22 coordination with the Federal Aviation Administration and
23 input from local airports, the Military Operations Area was
24 actually configured to reduce potential conflicts.

25 There are no public airports underlying the

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16

1 proposed White Elk MOA and the commercial air traffic routes
2 are not common in the affected area. The Ely airport is
3 located about 15 miles from the southwestern portion of the
4 proposed MOA airspace. Glider operations in the vicinity of
5 the MOA could be affected, but the 388th and the
6 419th fighter wings would develop their schedule to avoid
7 serious conflicts such as not scheduling use of the MOA
8 during glider week.

9 Now, there are two kinds of noise discussed in the
10 Environmental Impact Statement. The first is the
11 conventional subsonic noise as generated by an aircraft's
12 engine and its engine -- and its airframe. The second type
13 of noise is called -- is supersonic noise. Supersonic

14 flight creates sonic booms that are generated by the
15 aircraft when it flies faster than sound. And sonic booms
16 are described as brief impulsive sounds.

17 As I mentioned earlier supersonic operations would
18 occur above 18,000 feet mean sea level. According to the
19 federal interagency committee on urban noise, which is the
20 generally accepted measurement of the noise impacts used by
21 most federal agencies, noise exposure greater than 65DNL is
22 considered generally unacceptable over public services or
23 over residential, cultural, recreational, and entertainment
24 areas. Now DNL stands for Day-Night Level. Day-night
25 Average Sound Level -- I'm sorry.

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1 And for this EIS, we picked 20 points of interest
2 and evaluated them for potential noise impacts. Over all,
3 subsonic noise levels for the area under and near the
4 proposed White Elk MOA and the underlying ATCAA would not
5 increase perceptibly. Although there would be slight
6 changes in noise levels, these would continue to remain
7 below 45DNL.

8 These noise levels are low and not considered a
9 significant impact to people or animals. A supersonic noise
10 is represented using what we call CDNL. The noise in the
11 center of the ATCAA airspace from sonic booms would be about
12 49CDNL which equates to about 55DNL. On average, there
13 would be about ten sonic booms occurring per day throughout
14 the entire airspace. And since not all the booms would
15 reach the ground, it's estimated that only one sonic boom
16 per day -- that only one sonic boom would be heard in the

17 center of the airspace every two days.

18 There would be no damage to structures such as
19 buildings, windmills, or radio towers from the sonic booms.
20 Vibrations from the sonic booms would be far less than the
21 ten or greater pounds per square feet necessary to cause
22 structural damage.

23 In terms of safety, the 388th Fighter Wing would
24 continue to train as they normally do and in accordance with
25 all the Air Force safety directives. Only training chaffe

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18

1 authorized for use in the White Elk MOA and the
2 Currie/Tippet ATCAA would be used. Flares would be used in
3 the training airspace but Air Combat Command does not allow
4 release of these flares below 2,000 feet. To provide
5 sufficient time for the flare to burn, this requirement has
6 been put in place. And under the proposed action, there
7 would be no release of flares in the MOA below 14,000 feet
8 MSL or 3,100 to 8,500 AGL. So we're going at least a
9 thousand feet above what the requirement -- the minimum
10 requirement is for the Air Force.

11 There's no anticipated increase in bird aircraft
12 strikes since the operating altitudes in the Military
13 Operation Area average between 3,100 and 8,500 feet AGL
14 above most bird activity. Class A aircraft mishaps which
15 are those mishaps that result in the loss of life or
16 destruction of an aircraft provide an indicator of aircraft
17 safety.

18 For this EIS, the mishap rate for the F-16 in the
19 proposed MOA ATCAA was calculated using the lifetime mishap

20 rate are 3.82 mishaps for 100,000 flying hours. With
 21 relatively few hours currently flown in the Currie/Tippet
 22 ATCAA, the years between mishaps now is a hundred 39 years.

23 Based on projected annual operations of the F-16
 24 and the proposed MOA ATCAA, the estimated years between
 25 mishaps would be 6.4 years. Now, please realize that these

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19

1 are statistical estimates and they're not predictions.

2 Concerns over the safety of civilian aircraft and
 3 gliders were expressed during the scoping period, and
 4 general aviation pilots would be able to continue to use,
 5 see, and avoid rules. During peak glider events such as the
 6 July and August glider meets, Hill Air Force Base would not
 7 operate in the proposed MOA ATCAA airspace.

8 The proposal to expend chaffe in the new airspace
 9 would not create any flight safety issues. In regards to
 10 land use and recreation and visual resources, there would be
 11 no change to land status or management would occur since all
 12 of the aircraft operations would occur in airspace. Makes
 13 sense. Wouldn't be aircraft operations would occur on the
 14 ground.

15 Sonic booms generated from supersonic operations
 16 would not adversely impact any one location or affect any
 17 land uses below the airspace. Noises heard in wilderness
 18 areas would increase, but would remain below subsonic
 19 levels. In other words, less than 45DNL. And supersonic
 20 levels below 49CDNL or 55DNL, as I said earlier.

21 Aircraft are currently in the ATCAA airspace,
 22 however, visual observance of contrails in the ATCAA would

23 be expected to increase. Overall, there would be no adverse
24 impacts to biological resources found under or adjacent to
25 the proposed MOA.

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1 There are no federally listed or plant or animal
2 species located under the airspace. Pictured here is the
3 pygmy rat which the --

4 THE CROWD: Rabbit.

5 MS. PARKER: Could be a rat.

6 It's the pygmy rabbit which is currently being
7 petitioned to be listed as an endangered species under the
8 Endangered Species Act by the U.S. Fish and wildlife
9 Service. And the pygmy rabbit is located in the proposed
10 airspace -- below the proposed airspace.

11 Now, impact to biological resources from the use
12 of chaffe and flares residue or fire would not be
13 anticipated. Residue from chaffe and flare would not have
14 an adverse impact to plant or animal species, and the
15 potential for fires from flares would be remote considering
16 the altitude of the releases that would occur.

17 In regards to sonic booms, studies have indicated
18 that wildlife species tend to habituate to sonic booms with
19 no long-term adverse effect, and there are no known wetlands
20 underlying the proposed airspace. There are three national
21 registered properties located under the MOA ATCAA; however,
22 no impacts of these resources would be anticipated.

23 As presented under the noise section, vibrations
24 from sonic booms would be far less than the ten or greater
25 pounds per square foot necessary to cause structural damage.

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21

1 And no traditional resources have been identified under the
2 airspace. As I previously mentioned as well, impacts from
3 fire due to chaffe and flare or aircraft mishaps would not
4 be anticipated. Flares would not be released below
5 3,100 feet AGL.

6 In regards to American Indian concerns, as part of
7 the NEPA process, the Air Force contacted 37 American Indian
8 tribes, colonies, and other organizations regarding the Air
9 Force proposal. And the list was compiled from the 19
10 tribes that we -- tribes that we deal with at Hill Air Force
11 Base as part of their consultation process. As well as
12 additional tribes included in consultation with the Elko
13 and the Ely districts of the Bureau of Land Managements.

14 The findings in the EIS indicate no anticipated
15 impacts to traditional cultural ceremonies or resources from
16 implementing the proposed action. Sonic booms nor subsonic
17 noise would not disrupt traditional cultural ceremonies or
18 harm traditional plants, animals, or other resources.

19 Under the proposed action, access to local
20 airports would remain unchanged, resulting in no change to
21 airport revenues and associated expenditures by tourists.
22 Land development would not be restricted by the airspace
23 proposal and no permanent structures or equipment would be
24 placed on the ground.

25 The Air Force would mitigate flight activity in

□

22

1 the MOA and the overlying ATCAA during extensive glider
 2 activities, as mentioned earlier, in -- such as the June and
 3 July glider meets. Current aviation rules that are in
 4 existence allow civilian and commercial traffic to transit a
 5 MOA, and this would not change. It is not anticipated that
 6 revenues at local airports would be impacted due to the
 7 remote location of the Military Operations Area.

8 Local county populations would not be affected,
 9 and this airspace proposal would not impact development
 10 projects in the region. In regards to environmental justice
 11 and protection of children, no disproportionate impacts to
 12 low income or minority populations would be expected, and
 13 there would be no increased safety risks to children from
 14 the proposed operations in the MOA ATCAA airspace.

15 Subsonic noise levels would remain below 45DNL and
 16 subsonic booms would generate noise levels comparable to
 17 55DNL at the center of the airspace. These levels do not
 18 exceed the levels identified by the EPA as protective of
 19 public health.

20 Supersonic noise would affect the area of
 21 population as a whole, however, the noise would be short
 22 term and duration and would not be expected to have an
 23 adverse affect on human health or the environment.
 24 Increased noise levels at McGill Elementary School located
 25 on the edge of the airspace would not nearly imperceptible

□

1 and would remain below 45DNL.

2 Potential impacts to children from aircraft

3 operating in the MOA ATCAA would not expected to pose safety
4 risks to children as operations in the MOA ATCAA would
5 present similar operations to those conducted in the --
6 currently in the Utah Test and Training Range airspace.

7 This ends my presentation of the draft
8 Environmental Impact Statement analysis. And at this point,
9 I would like to turn the meeting back over to Colonel
10 Francis to begin the oral comment portion of this evening,
11 and I have to drink some water because my mouth is very dry
12 and I can barely talk now.

13 COL. FRANCIS: Ma'am, we've now reached the second
14 part of the hearing which is once again your opportunity to
15 provide any comments that you might wish to to the Air
16 Force. If you do elect to make comments, please note that
17 we have a court reporter here. She is recording everything
18 you say, including comments about water.

19 MS. PARKER: My mouth being dry.

20 COL. FRANCIS: But has anything from the
21 presentation sparked --

22 THE CROWD: No.

23 COL. FRANCIS: -- comments that you'd like to make
24 this evening?

25 THE CROWD: No.

□

24

1 COL. FRANCIS: Once again, I'll remind you that
2 you can make comments in writing either tonight if you would
3 like make to them or want to submit them to the Air Force
4 later, you can do that by mailing them to the address on the
5 slide up to and to the end of the public comment period

6 which ends September 29, 2008.

7 THE CROWD: Yeah, that's really my only comment.

8 We'll be providing written comments by September 29th.

9 COL. FRANCIS: Very well.

10 We will stand in recess pending the arrival of any
11 other individuals who wish to make a comment this evening.

12 (Brief recess.)

13 COL. FRANCIS: This hearing is called back to
14 order. During the recess no further speakers arrived. This
15 meeting is now adjourned.

16 (The deposition concluded at 7:33 P.M.)

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1 STATE OF NEVADA)
2 COUNTY OF CLARK) ss

3 I, the undersigned, a Certified Shorthand Reporter
4 of the Sate of Nevada, do hereby certify:

5 That the foregoing proceedings were taken before
6 me at the time and place herein set forth; that any
7 witnesses in the foregoing proceedings, prior to testifying,
8 were duly sworn; that a record of the proceedings was made

9 by me using machine shorthand which was thereafter
 10 transcribed under my direction; that the foregoing
 11 transcript is a true record of the testimony given.

12 Further, that if the foregoing pertains to the
 13 original transcript of a deposition in a Federal Case,
 14 before completion of the proceedings, review of the
 15 transcript [] was [x] was not requested.

16 I further certify that I am neither financially
 17 interested in the action nor a relative or employee of any
 18 attorney of any of the parties.

19 IN WITNESS WHEREOF, I have this date subscribed my
 20 name.

21 Dated:_____

22

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25

 DONNA J. RUDOLPH, NV CCR No. 420
 CA CSR NO. 9652, RPR

The names of the pilots were not immediately released. Dumboski says the injured pilot is in stable condition and is under observation at Mike O'Callaghan Federal Hospital.

The pilots were assigned to the 65th Aggressor Squadron at Nellis Air Force Base near Las Vegas.

Goldfield is about 180 miles north of the base

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PUBLIC HEARING
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR PROPOSED WHITE ELK MILITARY OPERATIONS AREA
WEST WENDOVER, NEVADA
SEPTEMBER 4, 2008

Reported by:
Donna J. Rudolph, RPR, CCR No. 420
CA CSR No. 9652
Job No. 94479

2

3 AIR FORCE REPRESENTATIVES:

4 Sheryl Parker, Air Combat Command White Elk MOA
Lt. Colonel David Francis, JAG
5 Lt. Colonel Bill Lyons, 419th Fighter Wing
Elliott Sanders, Headquarters Air Combat Command
6 Airspace and Ranges
Jerry Angus, Airspace and Aircraft Operations
7 Sr. Airman Brok McCarthy, Public Relations
Barbara Fisher, Public Relations

8

TEC, INCORPORATED:

9

10 KEVIN J. PETER, Principal /Office Manager
DAVID A. JETT, Program Director
TAMARA SHAPIRO
11 CHAREE D. HOFFMAN

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2 LAS VEGAS, NEVADA; THURSDAY, SEPTEMBER 4, 2008

3

6:00 P.M.

4

5 MR. PETER: The public meeting in West Wendover,
6 Nevada was held starting at five o'clock, and at six o'clock
7 no members of the public had appeared so Colonel Francis
8 opted to wait to present the briefing.

9 Later, approximately seven o'clock, two
10 individuals came to the meeting but chose not to have the
11 presentation provided and chose not to comment orally for
12 the record.

13 The meeting was adjourned at 7:30 p.m.

14 (Meeting adjourned at 7:30 P.M.)

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1 STATE OF NEVADA)
2 COUNTY OF CLARK)ss

3 I, the undersigned, a Certified Shorthand Reporter
4 of the State of Nevada, do hereby certify:

5 That the foregoing proceedings were taken before
6 me at the time and place herein set forth; that any
7 witnesses in the foregoing proceedings, prior to testifying,

8 were duly sworn; that a record of the proceedings was made
9 by me using machine shorthand which was thereafter
10 transcribed under my direction; that the foregoing
11 transcript is a true record of the testimony given.

12 Further, that if the foregoing pertains to the
13 original transcript of a deposition in a Federal Case,
14 before completion of the proceedings, review of the
15 transcript [] was [] was not requested.

16 I further certify that I am neither financially
17 interested in the action nor a relative or employee of any
18 attorney of any of the parties.

19 IN WITNESS WHEREOF, I have this date subscribed my
20 name.

21 Dated: _____

22

23

24

25

DONNA J. RUDOLPH, NV CCR No. 420
CA CSR NO. 9652, RPR

1 I, the undersigned, a Certified Court
2 Reporter of the State of Nevada, do hereby certify:


3 That the foregoing proceedings were taken
4 before me at the time and place herein set forth; that
5 any witnesses in the foregoing proceedings, prior to
6 testifying, were duly sworn; that a record of the
7 proceedings was made by me using machine shorthand
8 which was thereafter transcribed under my direction;
9 that the foregoing transcript is a true record of the
10 testimony given.

11 Further, that before completion of the
12 proceedings, review of the transcript [] was
13 [] was not requested.

14 I further certify I am neither financially
15 interested in the action nor a relative or employee
16 of any attorney or party to this action.

17 IN WITNESS WHEREOF, I have this date
18 subscribed my name.

19
20 Dated: _____
21

22 
23 DONNA J. RUDOLPH, RPR
24 NV CCR No. 420
25 CA CSR No. 9652

APPENDIX B
PUBLIC PARTICIPATION SUMMARY

APPENDIX B

PUBLIC PARTICIPATION AND CONSULTATION

1.0 INTRODUCTION

This appendix presents a summary of the public participation efforts for implementation of the Proposed White Elk MOA. Many opportunities have been and will be available for public participation in the White Elk MOA EIAP. These include the following:

- scoping sessions and comment period;
- agency notification and consultation; and
- public hearings and comment period.

Prior to any official proposal or EIAP, the proponents from Hill AFB held informal discussions with representatives of federal, state, and local agencies regarding the potential establishment of new airspace. Held in Ely and Elko, Nevada, January 10 and 11, 2006, these discussions helped Hill AFB and the Air Force to refine the proposal. Issues surrounding airport operations and civil aviation traffic arose, as well as concerns over wind farms and smoke stacks. By listening to these concerns, the Air Force modified the proposal by raising the floor altitude and reducing its size.

2.0 SCOPING PROCESS

The scoping period for the White Elk MOA EIAP began when the Notice of Intent was published in the *Federal Register* on November 28, 2007 (Attachment A). The closing date for the scoping period was set for January 7, 2008. Although the receipt of public comments is most useful during the early stage of the EIAP, the Air Force stated during the scoping sessions that they would welcome comments throughout the EIS analysis and preparation process.

The Air Force's intent during the scoping process was to provide the greatest level of opportunity for government agencies, special interest groups, and the general public to learn about the MOA proposal and to offer several ways for those interested to express their concerns regarding the proposal. Newspaper advertisements (Attachment B) were placed a week before the meetings in the following newspapers: *Ely Times*, *Elko Daily Free Press*, *Salt Lake Tribune*, *Standard Examiner*, *Deseret News*, and *The Wendover Times* describing the proposal and alternatives. The advertisement provided the time, dates, and locations of the meetings. Public comment was invited in these advertisements as well as at the scoping meetings.

The three scoping meetings were conducted in an "open house" format to create a comfortable atmosphere for attendees—one in which they could dialogue individually with Air Force personnel. Attendees were welcomed at the entrance by Air Force representatives. The greeters asked attendees to

sign in, distributed factsheets, and directed them to the first display. A copy of the factsheet can be found in Attachment C. Displays were designed to describe the proposed action, present the purpose and need for the proposed action, and enhance public understanding of the NEPA process while emphasizing the public's role in shaping the proposal. Copies of the displays are also found in Attachment C.

The Air Force held three public scoping meetings at locations in Nevada that could potentially be affected by the proposed action and in communities that have expressed concerns with proposed White Elk MOA. A meeting was also held with consulting American Indian tribal representatives to discuss the proposal and consult with them regarding any concerns. The schedule and location of each meeting is provided in Table 1.

Table 1. Schedule of Meetings and Attendance		
<i>City/Town</i>	<i>Date and Time</i>	<i>Location</i>
Ely	Tuesday, December 18 6:00 to 8:00 p.m.	Bristlecone Pine Convention Center 150 Sixth Street
Elko	Wednesday, December 19 6:00 to 8:00 p.m.	Elko Convention Center 700 Moren Way
West Wendover	Thursday, December 20 1:00 to 3:00 p.m. (American Indian Tribal Representatives Meeting) 6:00 to 8:00 p.m.	West Wendover Branch Library 590 Camper Drive

During the official scoping period, the Air Force received 14 comment letters; two were also received after the official scoping period and are being considered as well. The Elko County Commissioner's office sent comments expressing concerns on the potential impacts to the local economy including: land restrictions for development, building height restrictions, commercial/civil flight restrictions, potential impacts to wind energy projects and power plants, loss of revenue at Wendover and Ely airports, impacts to wilderness study areas, and effects to commercial tourism activities. The Commissioner's office is also concerned about the amount of already restricted airspace and the current activities of aircraft flying low and shattering windows—expansion of this airspace would only increase the number of low-flying aircraft and windows shattering.

A number of energy development projects are currently underway by LS Power affiliates, in the vicinity of the proposed White Elk MOA. In their comment, they requested the Air Force evaluate the potential impacts to these projects in the EIS.

There were several comments from the general public regarding risks to recreational gliding planes in areas including the American Great Basin, safety issues from chaff and flares, limiting flights so as not to conflict with search and rescue landings, and preserving the serenity of the remote areas. Two comment letters included support for the Air Force to control this airspace.

A letter was received from the State Historic Preservation Office requesting that the Air Force contact members of the public with interest in historic properties underlying the proposed MOA as well as affected Native American tribes that might be concerned about the effect on properties of religious and cultural significance. In response to the Air Force coordination letter, the United States Fish and Wildlife Service responded by sending a list of federally listed species that may occur or are potentially affected by the proposed action.

Concerns expressed during the scoping meetings at Ely and Elko came from private pilots who wanted to know how the new airspace would affect their ability to fly in the MOA and access to the local airports. A BLM representative at the Ely meeting talked about the concern for gliders in and around the proposed MOA airspace and access to the Ely airport. A contact name was provided to gather additional data for gliders in the affected region. There was also a letter sent by the Aircraft Owners and Pilots Association (AOPA) that requests that impacts on civil and commercial aviation be addressed in the EIS.

Courtesy visits, as directed by the Air Force, were made to several individuals outside of the scoping meetings. None of those contacted expressed concerns regarding the White Elk MOA proposal. The following were the individuals called upon to garner further input into the proposed action: Karen Rahala (White Pine County Regional Planning Director) and Mayor Hickman (Ely) discussed a proposed growth planning grant for Ely that would include two large natural gas power plants, bring in 1,000 construction workers and their families, and potentially generate 2,500 new jobs. Elaine Spencer (Elko Economic Development Authority) expressed no concerns with the proposal. Josephine Thaut (Mayor, West Wendover) commented on the night-time close air support training out of Hill AFB, but had no issues with the new MOA.

The Air Force contacted via telephone all American Indian Tribes that were sent IICEP letters prior to the meetings to ascertain receipt of the letters and establish whether they would attend any of the meetings. Tribes who were uncertain of the IICEP letter receipt or were unaware of the Air Force proposal, were faxed a copy of the original date-stamped and signed IICEP letter.

The Navajo Nation has concluded (in response to Tribal coordination by the Air Force) the proposed action area will not impact any Navajo traditional cultural properties or historical properties, but request that any inadvertent discoveries made during the course of analysis be reported to the Historic Preservation Department-Traditional Culture Program immediately.

At the Elko meeting, the Elko Daily Free Press sent a reporter to interview Air Force representatives and members of the public.

The major issues that emanated from the scoping process are the potential economic impacts to the region's energy projects, conflicts with civil/commercial aircraft flights and access to local airports, and effects to recreational activities (such as gliding and visitor's solitude).

3.0 INTERAGENCY-INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP)

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) letters were sent to federal, state, and local agencies; American Indian tribes; elected officials; and various interest groups. The IICEP letters outlined the proposal and announced plans for scoping meetings. Copies of this IICEP correspondence are presented at the end of this appendix (Attachment D).

4.0 PUBLIC HEARINGS AND COMMENTS

Public hearings were held to gather comments on the draft White Elk MOA EIS. All comments (written and oral) received during the official comment period (August 15, 2008 through November 13, 2008) are included in the Final EIS and this report summarizes those comments.

The public hearing comment period provided opportunities for government agencies, interest groups, and the general public to express their concerns regarding the analyses conducted in support of the draft EIS. A Public Hearing Plan defined how the public hearings would be performed, described the purpose and objective of public hearings, and provided the organization of (meeting format and activities), as well as assigned roles and responsibilities for the hearings. In addition, the White Elk MOA EIS public hearing support material (draft hearing script, mailing list, fact sheets, comment and registration forms, and newspaper advertisements), meeting dates, and locations were included with the Plan.

Official notification of the White Elk MOA draft EIS public comment period began with publication of the Notice of Availability (NOA) on August 15, 2008 in the *Federal Register*. Advertisements were placed in six newspapers, two weeks before the meetings to announce the hearing meetings: *Ely Times*, *Elko Free Press*, *Salt Lake Tribune/Deseret News*, *Wendover Times*, and *Standard Examiner*. The newspaper advertisements provided the time, dates, and locations of the meetings. Public hearings were held in Nevada communities central to the alternatives. These included Ely, Elko, and West Wendover.

Public comment was invited throughout the draft White Elk MOA EIS public comment period. Press releases, public hearings, and newspaper ads invited the public to express their concerns related to the information provided in the draft EIS.

The Air Force conducted three public hearing meetings at locations in Nevada. The schedule, location, and attendance level for the public hearing meetings are provided in Table 2.

Table 2. Schedule of Meetings and Attendance		
DATE	Location	Number of Attendees
September 2, 2008	Ely Bristlecone Pine Convention Center	10
September 3, 2008	Elko Elko Convention Center	2
September 4, 2008	West Wendover West Wendover Branch Library	2

Table 3 provides the number of attendees and comments received at the public hearing meetings. During the meetings, a total of 14 attended, no attendees provided verbal comments, and one comment sheet was filled out.

Table 3. Public Hearing Meeting Comment Summary			
Meeting Location	Attended	Verbal Comments	Written
Ely	10	6	0
Elko	2	0	1
West Wendover	2	0	0
TOTAL	14	6	1

Based on the oral testimony at the public hearings and written comments during the public comment period for the White Elk MOA draft EIS, the primary issues surround potential glider and other general aviation conflicts at Yelland Field in Ely. Ely is a destination spot for professional glider pilots from around the world. Approximately 40 glider pilots stay in Ely for four (4) to six (6) weeks in the summer to wait for good wind conditions for soaring. Once airborne, gliders will stay in the air for up to twelve (12) hours at a time. The proposed MOA would occupy a portion of airspace used by glider pilots during their flight season. While the MOA does not restrict air space use, White Pine County representatives and others associated with Yelland Field operations anticipate reduced numbers of glider flights due to perceived conflicts with sorties in the MOA. Individuals expressed concerns about indirect socioeconomic impacts due to potential reduction in glider pilot visits Ely. General aviation issues included longer flight times for medical evacuation flights while the MOA is activated, and potential airspace conflicts with new commercial air services. The Ely Airport Advisory Board expects the proposed action to conflict with its development planning activities, including an FAA Airport Improvement grant to expand the runway length to 9,000 feet and improve precision approach capabilities. The Board anticipates new economic initiatives to be tied to granting activities and is concerned the proposed action will impede or preclude its planned growth.

Additional issues brought forth during the public hearings were air quality impacts from aircraft and from chaff and flare disintegration; and the possible presence of bat migration corridors in the proposed MOA.

ATTACHMENT A

Federal Register Notice of Intent

Dated: November 20, 2007.

Patricia L. Toppings,

*Alternate OSD Federal Register Liaison
Officer, Department of Defense.*

[FR Doc. 07-5865 Filed 11-27-07; 8:45 am]

BILLING CODE 5001-06-M

DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Intent To Prepare an Environmental Impact Statement for Utah Test and Training Range Military Operations Area

AGENCY: Department of the Air Force,
Air Combat Command, DOD.

ACTION: Notice of Intent.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321, et seq.), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and Air Force policy and procedures (32 CFR Part 989), the U.S. Air Force is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) to assess the potential environmental impacts of creating a new military operations area (MOA) west of the Utah Test and Training Range (UTTR).

The Air Force proposal would expand the current UTTR airspace in Nevada in order to provide training opportunities not consistently available in existing UTTR airspace. This expansion is needed due to the scheduling limitations caused by other activities including large footprint weapons system tests. The MOA would underlay an established Air Traffic Control Assigned Airspace (ATCAA) unit and would not extend below 14,000 feet mean sea level. The Air Force proposal includes use of chaff and flares in the MOA and authorization of supersonic flight in the ATCAA.

Dates and Addresses: The Air Force will host a series of scoping meetings to receive public input on environmental concerns that should be addressed in the EIS. The schedule and location of the public scoping open house meetings are below. All meetings will last from 6 p.m. to 8 p.m.

Tuesday, 18 December 2007: Ely, Nevada, Bristlecone Pine Convention Center, 150 Sixth Street, Ely, NV 89301. Wednesday, 19 December 2007: Elko, Nevada, Elko Convention Center 700 Moren Way, Elko, NV 89801. Thursday, 20 December 2007: West Wendover, Nevada, West Wendover Branch

Library, 590 Camper Dr., West Wendover, NV 89883.

Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, comments should be submitted to the address below by January 7, 2008.

FOR FURTHER INFORMATION CONTACT: Ms. Sheryl Parker, HQ ACC/A7PP, 129 Andrews St., Suite 102, Langley AFB, VA 23665-2769, telephone 757-764-9334.

Bao-Anh Trinh,

*DAF, Air Force Federal Register Liaison
Officer.*

[FR Doc. E7-23137 Filed 11-27-07; 8:45 am]

BILLING CODE 5001-05-P

DEPARTMENT OF DEFENSE

Department of the Army

[Docket No. USA-2007-0021]

Submission for OMB Review; Comment Request

ACTION: Notice.

The Department of Defense has submitted to OMB for clearance, the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

DATES: Consideration will be given to all comments received by December 28, 2007.

Title, Form, and OMB Number: Army ROTC Referral Information; ROTC Form 155-R; OMB Control Number 0702-0111.

Type of Request: Extension.

Number of Respondents: 16,300.

Responses per Respondent: 1.

Annual Responses: 16,300.

Average Burden per Response: 15 minutes.

Annual Burden Hours: 4,075.

Needs and Uses: The purpose of the information is to provide prospect referral data to a Professor of Military Science to contact individuals who have expressed an interest in Army ROTC. The Army ROTC Program produces approximately 75 percent of the newly commissioned officers for the U.S. Army. The Army must have the ability to attract quality men and women who will pursue college degrees.

Affected Public: Individuals or households.

Frequency: On occasion.

Respondent's Obligation: Voluntary.

OMB Desk Officer: Ms. Hillary Jaffe.

Written comments and recommendations on the proposed information collection should be sent to Ms. Jaffe at the Office of Management and Budget, Desk Officer for DoD, Room 10236, New Executive Office Building, Washington, DC 20503.

You may also submit comments, identified by docket number and title, by the following method:

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

Instructions: All submissions received must include the agency name, docket number and title for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at <http://www.regulations.gov> as they are received without change, including any personal identifiers or contact information.

DOD Clearance Officer: Ms. Patricia Toppings.

Written requests for copies of the information collection proposal should be sent to Ms. Toppings at WHS/ESD/Information Management Division, 1777 North Kent Street, RPN, Suite 11000, Arlington, VA 22209-2133.

Dated: November 20, 2007.

Patricia L. Toppings,

*Alternate OSD Federal Register Liaison
Officer, Department of Defense.*

[FR Doc. 07-5862 Filed 11-27-07; 8:45 am]

BILLING CODE 5001-06-M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket Nos. ER07-1317-000, ER07-1317-001, ER07-1318-000, ER07-1318-001]

Citizens Electric Company of Lewisburg, PA, Wellsboro Electric Company; Notice of Issuance of Order

November 20, 2007.

Citizens Electric Company of Lewisburg, PA (Citizens) and Wellsboro Electric Company (Wellsboro) filed an application for market-based rate authority, with an accompanying rate tariff. The proposed market-based rate tariff provides for the sale of energy and capacity at market-based rates. Citizens and Wellsboro also requested waivers of various Commission regulations. In particular, Citizens and Wellsboro requested that the Commission grant blanket approval under 18 CFR part 34 of all future issuances of securities and assumptions of liability by Citizens and Wellsboro.



MEDIA ADVISORY

UNITED STATES AIR FORCE

Headquarters 388th Fighter Wing (ACC)
Office of Public Affairs
388fw.pa@hill.af.mil

Release No. 07-11-02
November 29, 2007

Environmental process begins for training airspace proposal

HILL AIR FORCE BASE, Utah – The Air Force announced today the beginning stages of an environmental impact statement process for a proposed new military operations area west of the Utah Test and Training Range in the skies above Nevada.

Measuring approximately 30 by 60 nautical miles and extending from 14,000 to 18,000 feet mean sea level, the White Elk MOA would be used by pilots of the active duty 388th Fighter Wing and Reserve 419th Fighter Wing here.

“Available airspace is a critical element for Airmen preparing for deployments to Southwest Asia and future worldwide operations,” said Col. Scott Dennis, 388th FW commander. “The White Elk MOA would allow our pilots to continue training at a realistic altitude over realistic terrain when UTTR airspace is being used for priority test missions.”

Currently, test missions at the range, such as those for cruise missiles and fifth-generation fighter aircraft like the F-22, take precedence over local aircrew training.

“The UTTR is a busy facility, conducting operational test and evaluation missions for the Department of Defense,” said 388th Range Squadron Commander, Col. James Reed. “The vast expanse and capabilities of the UTTR truly makes it a national asset.”

Before deciding whether to establish the new White Elk MOA, the Air Force is required to conduct an EIS to collect data, conduct research and analyze potential effects of the proposal on the environment. As part of this process, the Air Force plans a series of scoping meetings in Ely, Elko and Wendover, Nev. in mid-December to hear input from the public on the proposal.

At these scoping meetings, Air Force representatives will be available to discuss the White Elk MOA and to hear any concerns the public may have. The meetings will be held from 6-8 p.m. on the dates and at the locations indicated below.

<i>City/town</i>	<i>Date</i>	<i>Location</i>
Ely	Dec. 18, 2007	Bristlecone Pine Convention Center
Elko	Dec. 19, 2007	Elko Convention Center
Wendover	Dec. 20, 2007	West Wendover Branch Library

“Over the course of this year, we’ve held discussions with various community leaders and the Federal Aviation Administration about the need for a new MOA,” said Colonel Reed. “Based on those talks, we came up with the White Elk proposal. During December, we again want to hear the public’s input prior to developing a draft EIS. This input is important to us as we work through the EIS process.”

Once a draft of the EIS is completed in June 2008, it will be posted online and available to the public. The public will have the opportunity to comment on it in a formal 45-day comment period.

Media interested in speaking with 388th Range Squadron leadership may contact Barbara Fisher of 75th Air Base Wing environmental public affairs at (801) 775-3562.

ATTACHMENT B

Newspaper Advertisements for Notice of Intent



The **U.S. Air Force** announces its intent to prepare an Environmental Impact Statement (EIS) that would analyze the effects of a proposal to create a new Military Operating Area (MOA) underneath an existing Air Traffic Control Assigned Airspace (ATCAA) area in Nevada. The new MOA, designated White Elk, would expand the current Utah Test and Training Range (UTTR) airspace in Nevada in order to provide training opportunities not consistently available in the existing UTTR airspace. The floor of the MOA would not extend below 14,000 feet mean sea level. The Air Force proposal includes use of chaff and flares in the MOA and authorization of supersonic flight in the ATCAA. The Air Force will consider the information in the EIS in making the beddown decision and document it in a Record of Decision.

The **Air Force plans public scoping meetings** at the locations below and invites your participation. All meetings will be held in an open house format, and your participation will assist Air Force representatives in identifying public issues and concerns associated with the proposed White Elk MOA and in defining the scope of analysis for the EIS. During the open house, the Air Force will be available to describe the proposed action and no-action alternatives, define the process involved in preparing the EIS, outline the opportunities for public involvement in the process, and answer questions you may have relating to the proposal. All **open house meetings will begin at 6 p.m. and last until 8 p.m.** The open house will be held at the following locations:

<i>City/Town</i>	<i>Date</i>	<i>Location</i>
Ely	December 18, 2007	Bristlecone Pine Convention Center 150 Sixth Street
Elko	December 19, 2007	Elko Convention Center 700 Moren Way
Wendover	December 20, 2007	West Wendover Branch Library 590 Camper Dr.

If you are unable to attend one of these open house meetings, you may submit written comments to:

Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews St., Suite 102
Langley AFB, VA 23665-2769

Comments will be accepted through the EIS process, but scoping comments should be submitted by January 7, 2008 to ensure equitable consideration in the draft EIS. For more information about the proposal, contact Ms. Barbara Fisher at Hill AFB, Utah, at (801) 775-3652.

ATTACHMENT C

Fact Sheets/Displays



White Elk Military Operations Area Environmental Impact Statement

FACT SHEET

Hill AFB, UT

December 2007

The Air Force is proposing to expand airspace used by F-16 aircrews from Hill Air Force Base (AFB). Each year, the active duty 388th Fighter Wing (388 FW) and Reserve 419th Fighter Wing (419 FW) experience shortfalls in training due to scheduling demands on the local airspace of the Utah Test and Training Range (UTTR). Deployments, weather, student non-progression, and maintenance problems currently limit the available time for the 388 FW and the 419 FW to fly training sorties, and, while the UTTR is owned and managed by Hill AFB, there are other demands on this airspace. For instance, Hill AFB is a Major Range and Test Facility Base (MRTFB) with the objective of providing test and evaluation information to Department of Defense (DOD) decision-makers and supporting test and evaluation needs of DOD research and weapon system development programs. Part of this MRTFB program includes cruise missile weapons blocks of UTTR airspace to accommodate a safe separation distance for the aircraft and weapons system development. When these tests occur, the UTTR airspace is unavailable to F-16 aircrews for training. Another factor restricting Hill AFB access to UTTR airspace is the fact that the aircrew training conducted at the Nevada Test and Training Range (NTTR) airspace is often diverted to UTTR when fifth-generation fighters like the F-22 conduct training that requires most of NTTR airspace.

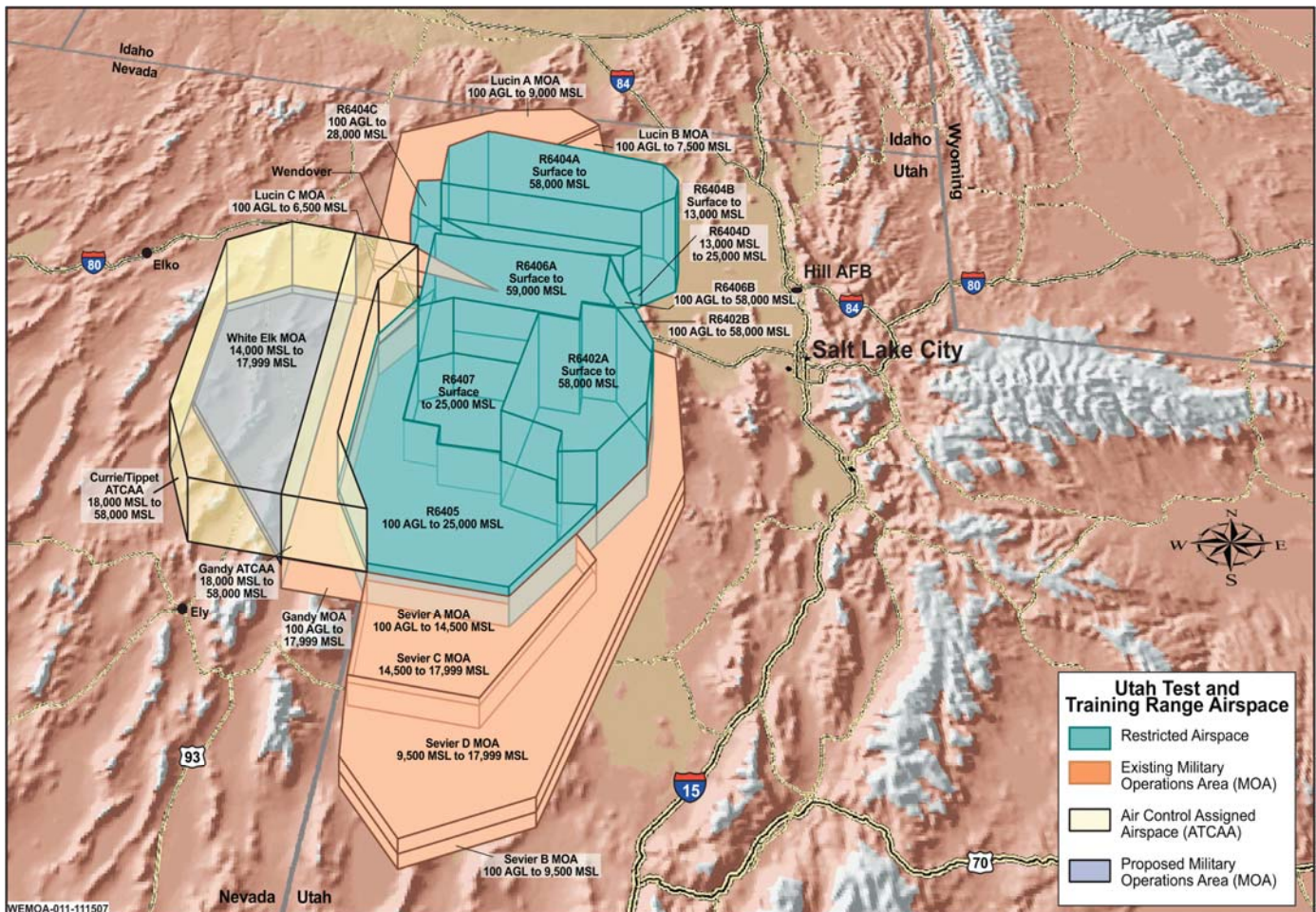
What is the Proposed Action?

The Air Force proposes to create new special use airspace – a military operations area (MOA) - underneath an existing Air Traffic Control Assigned Airspace (ATCAA) adjacent to the UTTR. The new MOA, designated White Elk, would overlie White Pine and Elko counties in the state of Nevada. The proposed White Elk MOA would measure 30 nautical miles (nm) by 60 nm and would extend from 14,000 feet mean sea level (MSL) up to but not including flight level (FL) 18,000 feet MSL. The new MOA would be adjacent to the Gandy MOA associated with UTTR, overlie several military training routes (MTR), and with the exception of the southwest corner, lie beneath the existing Currie/Tippet ATCAA. A figure of the existing and proposed airspace is shown on page 2.

What's Inside

- ◆ What is the Proposed Action?
- ◆ Why does the Air Force Need the Proposed Action?
- ◆ An Overview of the National Environmental Policy Act
- ◆ Informed Decision Making is Crucial
- ◆ The Environmental Impact Analysis Process
- ◆ Why Scoping is Important?
- ◆ The Scoping Period

The White Elk MOA would be used the majority of the time by F-16 squadrons of the 388 FW and 419 FW at Hill AFB to conduct training. To support this training, the Air Force proposes to authorize us of chaff and flares in the White Elk MOA and Currie/Tippet ATCAA. The Air Force also proposes to conduct supersonic flight activity in the Currie/Tippet ATCAA (i.e., FL 18,000 feet MSL to FL 58,000 feet MSL).



Why does the Air Force Need the Proposed Action?

The Air Force needs the White Elk MOA to enable F-16 aircrews of the 388 FW and 419 FW to conduct realistic training needed to meet objectives, providing the realistic training needed to respond to any crisis, anywhere. These aircrews need exclusive airspace for their use and because UTTR is unavailable due to priority scheduling uses for test and evaluation and aircrew training.

An Overview of the National Environment Policy Act

The National Environmental Policy Act (NEPA) is the national charter for promoting productive harmony between man and the environment and minimizing the impacts of federal actions. This law requires all federal agencies to consider potential environmental impacts in making decisions about those actions. Public involvement is an essential part of the process. Through involving the public and completing detailed environmental analysis, the NEPA process helps the decision-maker arrive at the best possible informed decision.

Informed Decision Making is Crucial

Informed decisions are based on a candid and factual presentation of environmental impacts. The Air Force is visiting communities potentially affected by the proposed action. They are seeking public input into this proposed action as well as seeking any new suggestions the public might have for the proposal to base the F-35 aircraft. To accomplish the EIS, the Air Force will collect data, conduct research, and analyze potential effects of the proposed action on the affected environment. Resources such as airspace management, noise, air quality, and potential effects on biological and cultural resources will be examined. The type and extent of impacts resulting from the proposed airspace expansion will be identified and the degree to which these impacts might potentially affect resources will be analyzed and presented in documentation and will be available for public view and comment.

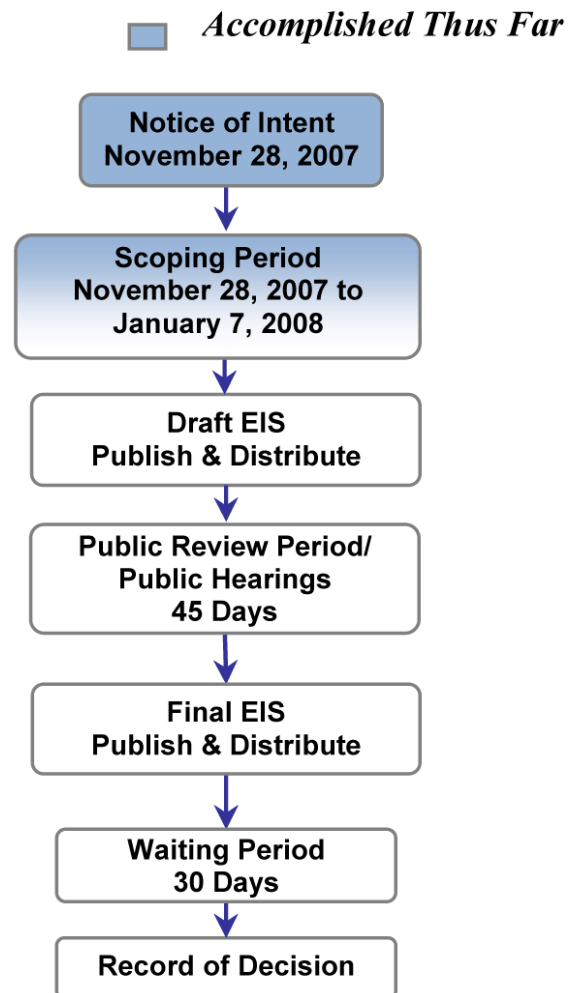
The Environmental Impact Analysis Process

The environmental impact analysis process (EIAP) began when the Air Force published a Notice of Intent in the *Federal Register* on November 28, 2007. This

Notice announced that the Air Force plans to conduct an environmental analysis for this proposal. The scoping period also began at that time. Although comments are accepted throughout the environmental impact analysis process, the Air Force encourages submitting them no later than January 7, 2008 to ensure comments can be given full consideration early in the environmental impact analysis process. During the scoping period, preparation of the draft Environmental Impact Statement (EIS) begins. Scoping comments, research, agency and tribal consultation, and various studies contribute to completion of the draft EIS.

Once the draft EIS is completed, it will be published and its availability announced in the *Federal Register* and local newspapers. This initiates the official 45-day public comment period. At this time, copies of the draft EIS will be sent to federal, state, and local agencies, American Indian Tribes, and to those citizens expressing an interest in receiving a copy. It will also be made available at local libraries and internet. Public hearing meetings will be held approximately three weeks following the draft EIS publication. At these meetings the public will have the opportunity to express their concerns about the analysis and conclusion presented in the draft EIS. A court reporter will be present and all comments officially recorded.

Following the 45-day public comment period, preparation of the final EIS begins. At this time, all relevant comments will be evaluated and the final EIS revised (if necessary) to address these comments. Upon publication of the final EIS, its availability will be announced in the *Federal Register* and a 30-day waiting period begins. Following this waiting period, the Record of Decision will be published. This document will present the Air Force's decision regarding the proposal to expand UTTR airspace for Hill AFB F-16 training.



Why Scoping is Important?

Scoping is just one of the tools used by federal agencies to obtain public input during the environmental impact analysis process. The goal of this process is for federal agencies to make informed decisions about their actions that could potentially affect the environment.

The Air Force uses input received during the scoping period to help identify issues for analysis. Issues raised during the scoping period are given full consideration and substantive and applicable issues will be addressed in the draft EIS. In a sense, scoping helps guide the environmental analysis conducted by the Air Force for the EIS.

Scoping is not the only time when public input is critical to environmental impact analysis process. Public comments on the draft EIS will also be solicited and public hearings held following the draft EIS publication. Comments on the draft EIS help shape the final document and play an important role in determining the most suitable proposal for Air Force operations and the environment.

The Public Scoping Period

By participating in the scoping process, you will help Air Force representatives identify public issues and concerns, assist in defining the scope of analysis, as well as develop other reasonable alternatives for the White Elk MOA proposal. The public can provide input in two ways:

1. By attending any one of three open house scoping meetings, anytime between 6 p.m. and 8 p.m. at the locations indicated below, or

SCHEDULE OF MEETINGS		
<i>City/Town</i>	<i>Date</i>	<i>Location</i>
Ely	Tuesday, December 18	Bristlecone Pine Convention Center, 150 Sixth Street
Elko	Wednesday, December 19	Elko Convention Center, 700 Moren Way
West Wendover	Thursday, December 20	West Wendover Branch Library, 590 Camper Drive

2. By submitting written comments anytime during the public scoping period that began on November 28, 2007. Written comments should be sent to Ms. Sheryl Parker, Air Combat Command, Langley AFB, at the address below. Although we will accept comments throughout the process, we recommend that your scoping comments be sent by January 7, 2008 to ensure equitable consideration in the draft EA analysis.

For more information about the proposed airspace expansion or to submit written comments, please contact:

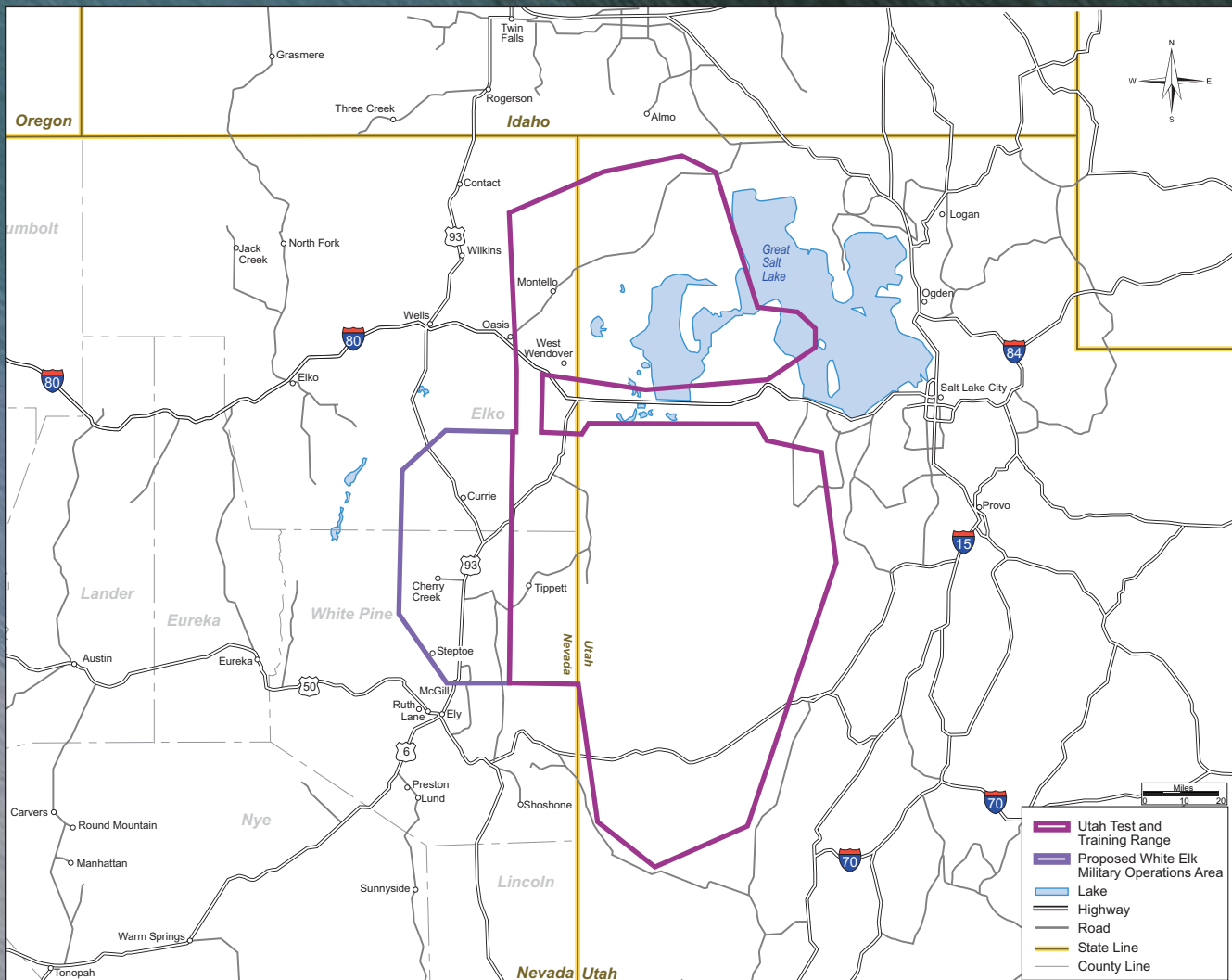
Ms. Sheryl Parker
HQ ACC/A7PP
129 Andrews St., Suite 102
Langley AFB, VA 23665-2769

You may also contact Ms. Barbara Fisher at Hill AFB Utah, at (801) 775-3652 for additional information.



White Elk Military Operations Area Environmental Impact Statement

Welcome to the Scoping Open House



Meeting Locations:

Ely	December 18, 2007	Bristlecone Pine Convention Center, 150 Sixth Street
Elko	December 19, 2007	Elko Convention Center, 700 Moren Way
West Wendover	December 20, 2007	West Wendover Branch Library, 590 Camper Dr.



White Elk Military Operations Area Environmental Impact Statement

Environmental Impact Analysis Process

The National Environmental Policy Act guides the environmental impact analysis.

Your involvement and input are essential to the environmental impact analysis process.

The Environmental Impact Statement will analyze the following resources to determine potential effects to the local environment.

Aircraft Operations

Noise, Air Quality, Hazardous Materials, Hazardous Waste, Airspace Management, and Safety

Natural Resources

Soils and Water; Vegetation; Wildlife; Threatened, Endangered, and Special Status Species

Cultural Resources

Historic, Traditional, and Archaeological Resources

Human Resources

Land Use and Management, Socioeconomics, Recreation, Environmental Justice, Effects on Children, Transportation

Accomplished Thus Far

Notice of Intent
November 28, 2007



Scoping Period
November 28 to January 7



Draft EIS
Publish and Distribute



Public Review Period/
Public Hearings
45 Days



Final EIS
Publish and Distribute



Waiting Period
30 Days



Record of Decision

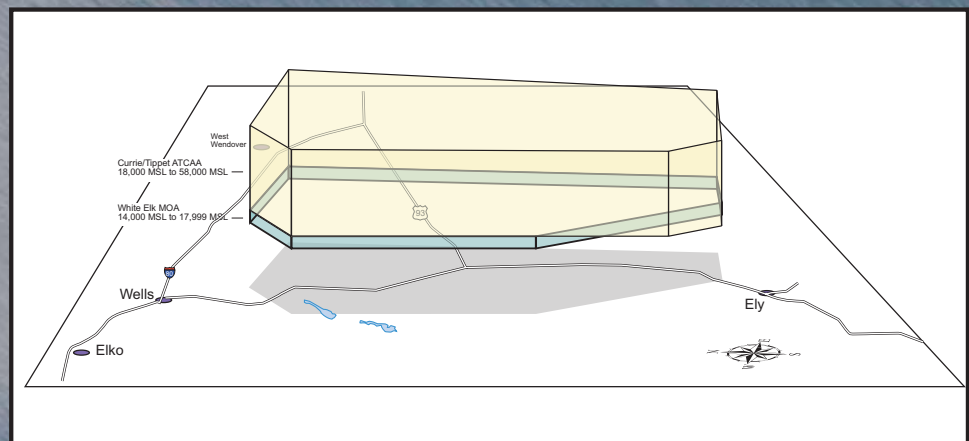
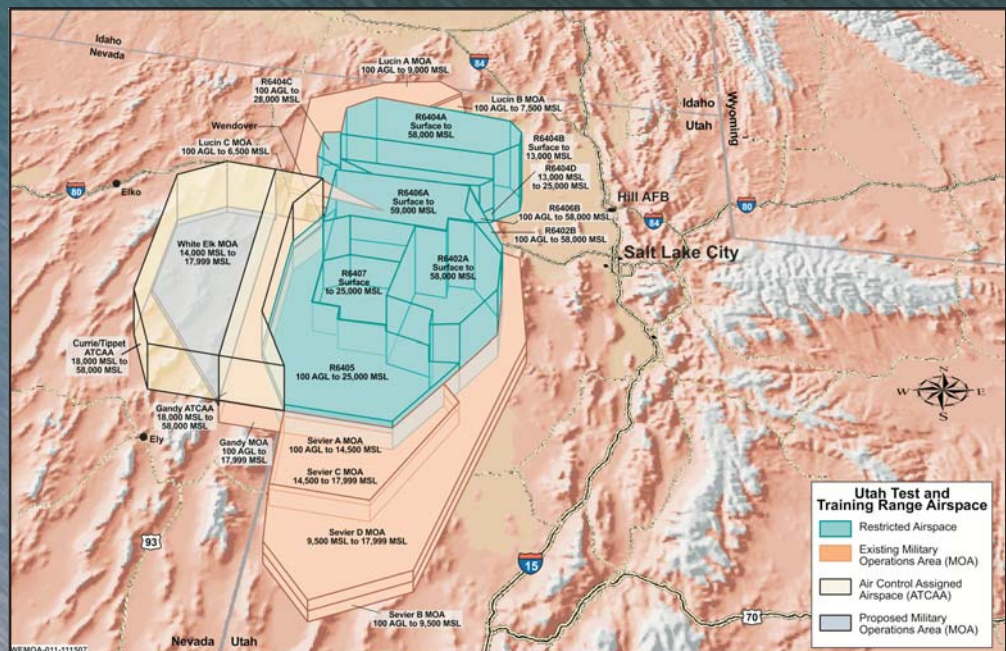


White Elk Military Operations Area Environmental Impact Statement

Proposed Action

The Air Force proposes to create a new Military Operations Area in the State of Nevada underneath the existing Currie/Tippit Air Traffic Control Assigned Airspace adjacent to the Utah Test and Training Range.

- ❖ The new Military Operations Area, designated the White Elk Military Operations Area, would overlie White Pine and Elko counties.
- ❖ The proposed White Elk Military Operations Area would measure 30 nautical miles by 60 nautical miles and extend from 14,000 feet mean sea level up to but not including 18,000 mean sea level.
- ❖ The White Elk Military Operations Area would be used by Hill AFB F-16 squadrons of the 388th and 419th Fighter Wings.
- ❖ These units would use this airspace to conduct Ready Aircrew Program training necessary for deployment preparation.





White Elk Military Operations Area Environmental Impact Statement

Purpose and Need

F-16 aircrews from Hill AFB need to be combat ready

- ❖ Utah Test and Training Range provides the airspace Hill AFB F-16 squadrons need to conduct their training
- ❖ Different types of training are conducted on Utah Test and Training Range by both Hill AFB aircrews and those from other bases
- ❖ Training occurs in both Military Operations Areas and Air Traffic Control Assigned Airspace
- ❖ Supersonic flights are conducted and chaff and flare use are used by F-16s in existing Utah Test and Training Range Gandy Military Operations Area and Air Traffic Control Assigned Airspace
- ❖ Cruise missile tests are also conducted in approved Utah Test and Training Range ranges and airspace by aircrews from other bases

Currently, training for F-16 squadrons is limited during cruise missile test operations

- ❖ Expanded Military Operations Areas and Air Traffic Control Assigned Airspace will allow F-16s the ability to continue training during cruise missile tests in a realistic environment
- ❖ Extending existing airspace provides an effective way to ensure Hill AFB F-16s obtain the important training they need
- ❖ As the testing of fifth-generation fighter aircraft like the F-22 and F-35 increases, Utah Test and Training Range airspace may see more scheduling conflicts



ATTACHMENT D

IICEP Letters

White Elk MOA IICEP Letters Sent Out

American Indian Tribes		
<i>Name</i>	<i>Title</i>	<i>Group</i>
Leon Bear	Chairman	Skull Valley Band of Goshute Indians
Dennis Bill	Chairman	Yomba Shoshone Tribe
Diana Buckner	Chairperson	Ely Shoshone Tribe
Alonzo Coby	Chairman	Fort Hall Sho-Bann Tribe
Carrie Dann		Western Shoshone Defense Project
Gwen Davis	Chairperson	Northwestern Band of Shoshoni Tribe
Barbara Durham	THPO	Timbisha Shoshone Tribe
Blaine Edmo	Chair	Shoshone-Bannock Tribes of the Fort Hall Business Council
Terry Gibson	Chairman	Shoshone-Paiute Business Council
Davis Gonzales		Te-Moak Tribal Council
Loretta Hildreth	Chairperson	Wells Band Council
Vernon Hill	Chairman	Eastern Shoshone Tribe
Burton Hutchinson, Sr.	Chairman	Arapaho Tribe of Wind River Reservation
Joe Kennedy	Chairman	Timbisha Shoshone Tribe
Judy Knight Frank	Chairperson	Ute Mountain Ute Tribe
Robert Marcio		Bureau of Indian Affairs – Eastern Nevada Agency
D. Fred Matt	Chairman	Confederated Salish and Kootenai Tribes
Kami Miller	Chairperson	Moapa Band of Paiutes
Alfreda Mitre	Chairperson	Las Vegas Paiute Tribal Council
Sheryl Mose Temoak	Chairperson	South Fork Band Council
Amos Murphy	Chairman	Gosiute Indian Tribe
Johnny Murphy	Chairman	San Juan Southern Paiute Tribe
Lynett Piffero	Chairperson	Elko Band Council
Reggie Premo		Western Shoshone Committee
Kyle Prior	Chairman	Duck Valley Sho-Pai Tribes
Arlen Quentawki, Sr.	Governor	Pueblo of Zuni
Ruby Sam	Chairperson	Duckwater Shoshone Tribe
Joe Shirley	President	Navajo Nation
Rupert Steele	Chairman	Goshute Business Council
Wayne Taylor, Jr.	Chairman	Hopi Tribe
Lora Tom	Chairperson	Paiute Indian Tribe of Utah
Gary Tom	Chairman	Kaibab-Paiute Tribe
Carl Venne	Chairman	Crow Tribe of Montana
Ronnie Woods	Chairman	South Fork Band Council
D. Floyd Wopsock	Chairperson	Ute Indian Tribe
Mary Jane Yazzie	Council Chair	White Mesa Ute Council
Michael Young	Chairman	Battle Mountain Band Council
		Te-Moak Tribe of Western Shoshone
		Timbisha Environmental Department
	Chairperson	Skull Valley Band of Goshute Indians
	Chairperson	Fort McDermitt Paiute-Shoshone
		Reno-Sparks Indian Colony
		Washoe Tribe of Nevada-California
		Wells Band of Shoshones
		Pyramid Lake Paiute Tribe
		Yerington Paiute Tribe

White Elk MOA IICEP Letters Sent Out (con't)

Elected Officials (Signed by Timothy A. Byers)		
<i>Name</i>	<i>Title</i>	<i>Group</i>
Honorable Harry Reid	Senator	
Honorable Dean Heller	Congressman	
Honorable Paul Ray	Representative	
Honorable John Valentine	Senator	
Honorable Jim Gibbons	Governor	
Honorable Dean Rhodes	Senator	
Honorable Shelley Berkley	Congresswoman	
Honorable Jon Porter	Congressman	
Honorable Orrin Hatch	Senator	
Honorable Robert Bennett	Senator	
Honorable Jim Matheson	Congressman	
Honorable Christopher Cannon	Congressman	
Honorable Greg Curtis	Representative	
Honorable John Ensign	Senator	
Honorable Rob Bishop	Congressman	
Federal and State Agencies (Signed by Larry H. Dryden, P.E.)		
Leo Drozdoff	Administrator	Nevada Division of Environmental Protection State of Nevada
		Nevada Division of Emergency Management
		Nevada Department of Wildlife
Kenneth Mayer	Director	Nevada Department of Wildlife Reno Headquarters
Wilson Martin		Utah State Historical Society
Ronald James		Nevada State Historic Preservation Office
Richard Currit		Wyoming State Historic Preservation Office
Alice Baldrice		State Historic Preservation Office
Rebecca Palmer		State Historic Preservation Office
Cornelia Keatinge	Program Analyst	Advisory Council on Historic Preservation
		National Trust for Historic Preservation
		National Trust for Historic Preservation Western Region (NV)
Chris Hanefeld	PA Officer	Bureau of Land Management – Ely
Dan Netcher	Field Office Manager	Bureau of Land Management – Ely Field Office
Helen Hankins	Field Office Manager	Bureau of Land Management – Elko Field Office
Cameron Dingman	Unit Aviation Manager	Bureau of Land Management – Elko Field Office
Norman Rockwell	Civil Engineer	Bureau of Land Management – Elko District Office
Tamra Hawthorne	Elko Wilderness Director	Bureau of Land Management – Elko
Gosia Targosz	Clearinghouse Coordinator	Nevada State Clearinghouse Department of Administration
Patricia Erwin	District Ranger	United States Forest Service
Robert Williams	State Supervisor	U.S. Fish and Wildlife Service Nevada Ecological Field Office
Ron Wenker	State Director	Bureau of Land Management State Office
Wayne Nastri	Regional Administrator	U.S. EPA, Region IX Office of the Regional Administrator
Willie Taylor	Director	Office of Environmental Policy and Compliance, U.S. Department of the Interior
		Bureau of Reclamation

White Elk MOA IICEP Letters Sent Out (con't)

Federal and State Agencies (Signed by Larry H. Dryden, P.E.) - con't

		USDA Forest Service – Ruby Mountain Jarbidge Range Stations
		U.S. Forest Service – Humboldt/Toiyabe National Forest
Ronald McRobbie	Regional Environmental Officer	Air Force Regional Environmental Office
Randy Johnson	Aviation Manager	BLM – Ely/Las Vegas
Pam Wilcox		State of Nevada, Division of Lands
Dave Pattsaretti	Assistant Field Director	Bureau of Land Management – Elko Field Office
Ronald James	SHPO	Historic Preservation Office

Office Holders (Signed by Bruce MacDonald, P.E.)

Brent Eldridge	Commissioner Chair	
Josephine Thaut	Mayor	West Wendover, Nevada
Michael Franzoia	Mayor	Elko, Nevada
George Chaches	Mayor	Ely, Nevada
Corey Norman	Staffer	
Rob Roake	Staffer	
Peter Jenks	Staffer	
Mary Maughan	Staffer	
Sandy Kester	Staffer	
Brad Mollet	Staffer	
Mike Nannini	Commissioner	
Charles Myers	Commissioner	
John Ellison	Commissioner	
Warren Russell	Commissioner Chair	
Sheri Eklund-Brown	Commissioner	
Laurie Carson	Commissioner	
Gary Lane	Commissioner	
Raleene Makley	Commissioner	
David Pound	Commissioner	
Bill Castle	Staffer	
Nate Graham	Staffer	
Steve Peterson	Staffer	
Rachel Dresen	Staffer	



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

HQ ACC/A7
129 Andrews Street, Suite 102
Langley AFB VA 23665-2769

Leon Bear, Chairman
Skull Valley Band of Goshute Indians
3359 S. Main Street, #808
Salt Lake City UT 84029

NOV 26 2007

Dear Chairman Bear

The United States Air Force (Air Force) is in the initial stages of preparing an Environmental Impact Statement (EIS) to analyze potential impacts associated with a new airspace proposal. The proposal would establish the White Elk Military Operations Area (MOA) west of the Utah Test and Training Range. The White Elk MOA would lie directly beneath the existing Currie and Tippet Air Traffic Control Assigned Airspace (ATCAA), with the exception of the southwest corner, and be wholly within the State of Nevada. The MOA would extend from 14,000 feet mean sea level (MSL) to 17,999 feet MSL. The proposal includes the use of chaff and flares in the MOA and overlying ATCAA and permits supersonic flight in the ATCAA (map attached).

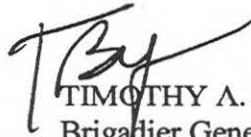
In support of this process we request your input in identifying general or specific issues or areas of concern you feel should be addressed in the EIS. In addition, if your Tribe recently completed, is currently implementing, or is planning to undertake any new activities which you believe should be included as part of our cumulative impact analysis, we ask you to identify the activity and provide a point of contact.

The Air Force plans to hold a series of scoping meetings to receive public input on alternatives, concerns, and issues to be addressed in the EIS. Meetings would be held at the following locations:

December 18, 6 p.m. - 8 p.m. Bristlecone Pine Convention Center, 150 Sixth Street, Ely, NV
December 19, 6 p.m. - 8 p.m. Elko Convention Center, 700 Moren Way, Elko, NV
December 20, 6 p.m. - 8 p.m. West Wendover Branch Library, 590 Camper Dr., West Wendover, NV

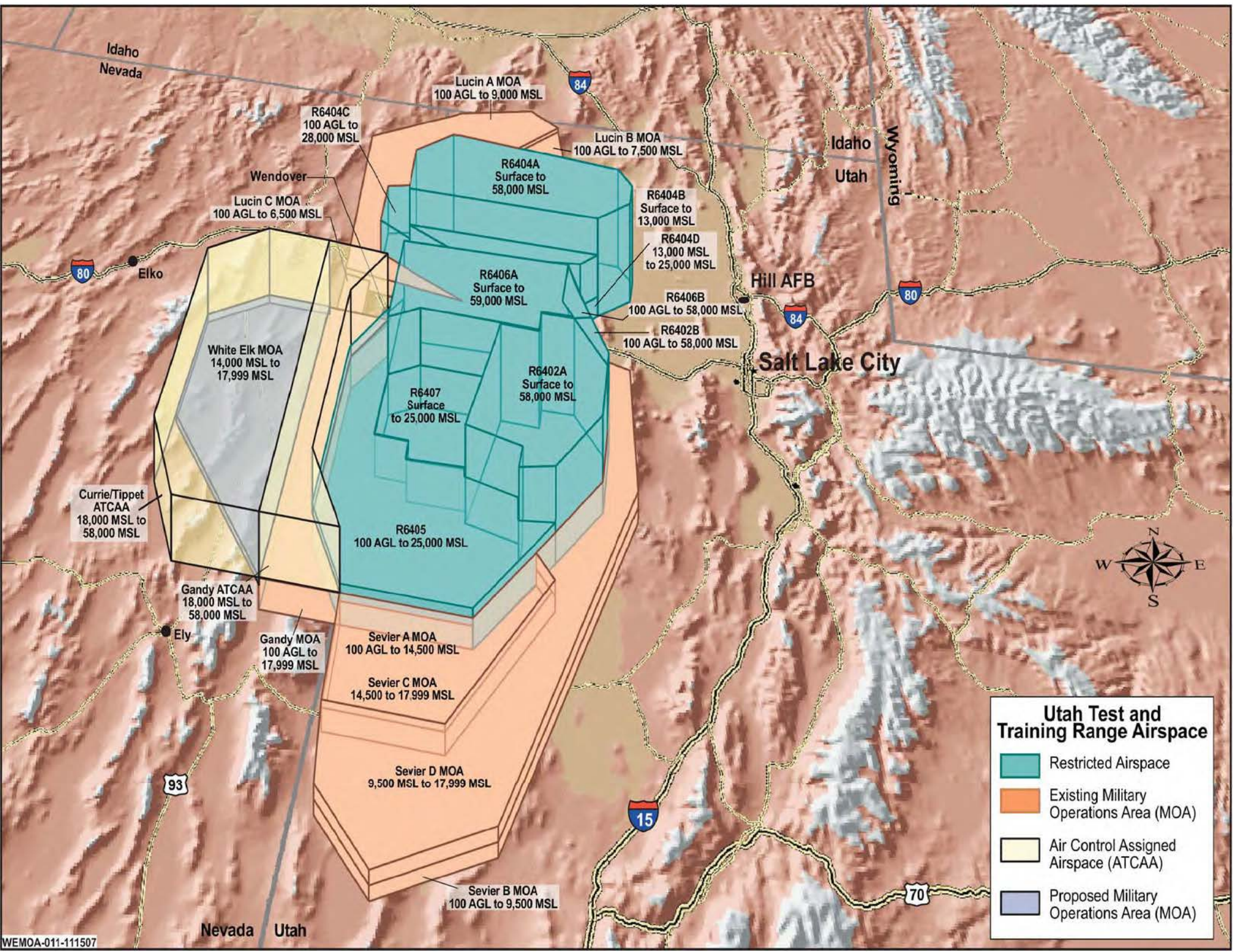
We will also hold a meeting with consulting American Indian tribes to discuss resources of concern. This meeting is scheduled for December 20, from 1:00 p.m. - 3:00 p.m. at the West Wendover Branch Library. We encourage you to attend one or more of these meetings to find out more about this proposal.

Please forward any identified issues or concerns to Sheryl Parker, White Elk MOA EIS Project Manager at the above address. If you have any questions about the proposal, you may contact her at (757) 764-9334, or the Hill AFB point of contact, Jaynie Hirschi. Ms. Hirschi can be reached at 75 CEG/CEVOR, 7274 Wardleigh Road, Hill AFB, UT 84056-5137 or at (801) 775-6920. We cordially request comments or concerns be sent by January 7, 2008; however, we will consider comments received at any time during the environmental process to the extent possible.



TIMOTHY A. BYERS
Brigadier General, USAF
Headquarters Air Combat Command
Director of Installations

Attachment:
Map



Utah Test and Training Range Airspace

- Restricted Airspace
- Existing Military Operations Area (MOA)
- Air Control Assigned Airspace (ATCAA)
- Proposed Military Operations Area (MOA)



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

HQ ACC/A7
129 Andrews St., Suite 102
Langley AFB VA 23665-2769

NOV 26 2007

Honorable Harry Reid
528 Hart Senate Building
Washington, DC 20510

Dear Senator Reid

The United States Air Force (Air Force) is in the initial stages of preparing an Environmental Impact Statement (EIS) to analyze potential impacts associated with a new airspace proposal. The proposal would establish the White Elk Military Operations Area (MOA) west of the Utah Test and Training Range. The MOA would lie directly beneath the existing Currie and Tippet Air Traffic Control Assigned Airspace (ATCAA), with the exception of the southwest corner, and be wholly within the State of Nevada. The MOA would extend from 14,000 feet mean sea level (MSL) to 17,999 feet MSL. The proposal includes the use of chaff and flares in the MOA and overlying ATCAA and permits supersonic flight in the ATCAA (map attached).

We plan to hold a series of scoping meetings to solicit public and government agency comments on the proposal to assist us in shaping the analysis. Meetings will be held at the locations shown below. During the meetings, the Air Force will describe the proposed action and alternatives, the National Environmental Policy Act process, and outline the opportunities for public involvement.

December 18, 6 p.m. - 8 p.m. Bristlecone Pine Convention Center, 150 Sixth Street, Ely, NV
December 19, 6 p.m. - 8 p.m. Elko Convention Center, 700 Moren Way, Elko, NV
December 20, 6 p.m. - 8 p.m. West Wendover Branch Library, 590 Camper Dr., West Wendover, NV

If you or your staff has any questions or concerns about the proposal or process we would like to hear from you. Our EIS Project Manager is Ms. Sheryl Parker, HQ ACC/A7PP and can be reached at the above address or at (757) 764-9334.

TIMOTHY A. BYERS
Brigadier General, USAF
Headquarters Air Combat Command
Director of Installations

cc:
SAF/LL
HQ AF/A7CB



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

NOV 26 2007

MEMORANDUM FOR: Mr. Leo Drozdoff, Administrator
Nevada Division of Env Protection State of Nevada, Capitol Complex
333 W. Nye Lane, Room 138
Carson City NV 89706

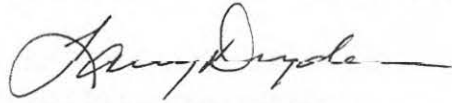
FROM: HQ ACC/A7PP
129 Andrews Street, Suite 102
Langley AFB VA 23665-2769

SUBJECT: Environmental Impact Statement (EIS) for the White Elk Military Operations Area
Hill Air Force Base Utah

1. The United States Air Force (Air Force) is in the initial stages of preparing an Environmental Impact Statement (EIS) to analyze potential impacts associated with a new airspace proposal. The proposal would establish the White Elk Military Operations Area (MOA) west of the Utah Test and Training Range. In accordance with Executive Order, 12372, Intergovernmental Review of Federal Programs, the Air Force is requesting input from other federal, state and local agencies on the proposal.
2. The White Elk MOA would lie directly beneath the existing Currie and Tippet Air Traffic Control Assigned Airspace (ATCAA), with the exception of the southwest corner, and be wholly within the State of Nevada. The MOA would extend from 14,000 feet mean sea level (MSL) to 17,999 feet MSL. The proposal includes the use of chaff and flares in the MOA and overlying ATCAA and permits supersonic flight in the ATCAA (map attached).
3. In support of this process we request your input in identifying general or specific issues or areas of concern you feel should be addressed in the EIS. In addition, if your agency recently completed, is currently implementing, or is planning to undertake any new activities which you believe should be included as part of our cumulative impact analysis, we ask you to identify the activity and provide a point of contact.
4. The Air Force plans to hold a series of scoping meetings to receive public input on alternatives, concerns and issues to be addressed in the EIS. Meetings will be held at the following locations:

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December 20, 6 p.m. - 8 p.m. West Wendover Branch Library, 590 Camper Dr., West Wendover, NV
5. Please forward any issues or concerns to Ms. Sheryl Parker, White Elk MOA EIS Project Manager at the above address. If you have any questions about the proposal, you may contact her at (757) 764-9334, or the Hill AFB point of contact, Mr. Sam Johnson. Mr. Johnson may be reached at 75 CEG/CEVR, 5948 Southgate Avenue, Bldg 1A, Hill AFB 84056 or at (801) 775-

3653. We cordially request comments or concerns be sent by January 7, 2008; however, we will consider comments received at any time during the environmental process to the extent possible.



LARRY H. DRYDEN, P.E.
Chief, Planning Branch

Attachment:
Map



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR COMBAT COMMAND
ANDREWS AIR FORCE BASE VIRGINIA

HQ ACC/A7P
129 Andrews St., Suite 102
Langley AFB VA 23665-2769

NOV 26 2007

Commissioner Chair Brent Eldridge
801 Clark Street, County Courthouse
Ely, NV 89301


Dear Commissioner Chair Eldridge:

The United States Air Force (Air Force) is in the initial stages of preparing an Environmental Impact Statement (EIS) to analyze potential impacts associated with a new airspace proposal. The proposal would establish the White Elk Military Operations Area (MOA) west of the Utah Test and Training Range. The MOA would lie directly beneath the existing Currie and Tippet Air Traffic Control Assigned Airspace (ATCAA), with the exception of the southwest corner, and be wholly within the State of Nevada. The MOA would extend from 14,000 feet mean sea level (MSL) to 17,999 feet MSL. The proposal includes the use of chaff and flares in the MOA and overlying ATCAA and permits supersonic flight in the ATCAA (map attached).

We plan to hold a series of scoping meetings to solicit public and government agency comments on the proposal to assist us in shaping the analysis. Meetings will be held at the locations shown below. During the meetings, the Air Force will describe the proposed action and alternatives, the National Environmental Policy Act process, and outline the opportunities for public involvement.

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December 20, 6 p.m. - 8 p.m. West Wendover Branch Library, 590 Camper Dr., West Wendover, NV

If you or your staff has any questions or concerns about the proposal or process we would like to hear from you. Our EIS Project Manager is Ms. Sheryl Parker, HQ ACC/A7PP and can be reached at the above address or at (757) 764-9334.


BRUCE MACDONALD, P.E.
Headquarters Air Combat Command
Programs Division

Attachment:
Map



United States
Department of
Agriculture

Forest
Service

Humboldt-Toiyabe
National Forest

Ruby Mountains/Jarbridge
Ranger Districts
P. O. Box 246
Wells, NV 89835

File Code: 1590-2

Date: December 6, 2007

Ms. Sheryl Parker
Project Manager
Department of the Air Force
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

Dear: Ms. Parker:

The Ruby Mountains/Jarbridge Ranger Districts are pleased with the opportunity to comment on the proposed White Elk Military Operations Area. After reviewing your letter for solicitation of comments and the attached map received on November 30, 2007, it appears that the proposed Military Operations Area does not cover areas of the National Forest managed by the Ruby Mountains Ranger District. It is however adjacent to National Forest Lands. Our concern is that flights remain within the proposed Military Operations Area and that low level flights are not conducted over the East Humboldt and Ruby Mountains Wilderness Areas as this will impact recreationist experiences in these areas. Currently the Federal Aviation Authority has a flight advisory of 2,000 feet above ground level for all federally designated wilderness areas. We are requesting that this advisory be followed for any flights over the Ruby Mountains and East Humboldt Wilderness Areas.

We also notice that there appears to be a discrepancy between the flight levels in the letter and the flight levels on the map. The levels in the letter both refer to mean sea level, but the levels on the map have above ground level and mean sea level. These appear to be inconsistent as 14,000 feet above ground level as shown on the map would be higher than 17,999 mean sea level.

Sincerely,

TERRY CHUTE
District Ranger





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Nevada Fish and Wildlife Office

1340 Financial Blvd., Suite 234

Reno, Nevada 89502

Ph: (775) 861-6300 ~ Fax: (775) 861-6301

January 9, 2008

File No. 2008-FA-0073

Ms. Sheryl Parker
Department of the Air Force
HQ ACC/A7PP
129 Andrews Street, Suite 102
Langley Air Force Base, Virginia 23665-2769

Dear Ms. Parker:

Subject: Environmental Impact Statement for the White Elk Military Operations Area, Hill Air Force Base, Utah

This responds to your request received on November 28, 2007, for comments pertaining to issues or areas of concern with respect to the proposed White Elk Military Operations Area (MOA) and associated Environmental Impact Statement (EIS). Following is a list of federally listed species that may occur in the subject project area or be affected by the proposed action:

- Clover Valley speckled dace (*Rhinichthys osculus oligoporus*), endangered
- Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), threatened
- Columbia spotted frog (*Rana luteiventris*), Great Basin Distinct Population Segment, candidate
- Yellow billed-cuckoo (*Coccyzus americanus*), Western U.S. Distinct population Segment, candidate

Although several additional species and issues of concern are apparent, our degree of concern will be influenced by the details of the proposed action including the anticipated level of activity as well as the spatial and temporal aspects of the action.

Research on the effects of supersonic flight on wildlife species has presented varying conclusions. Impacts are species or taxa dependent and range from negligible to substantial. These examinations have typically focused on repeated, low-altitude overflights. Given the airspace of the MOA begins at 14,000 feet mean sea level, impacts to wildlife species from aircraft noise including sonic booms will likely depend on the topography of the underlying terrain. Several mountain ranges in the area have peaks that exceed 11,000 feet elevation with intervening basins being substantially lower. Depending on the aircraft's altitude above ground




level and ultimately the associated noise level, species response will likely vary. Additionally, species response to the action will likely be influenced by the extent of the activity and the time of year it occurs. For example, a large raptor migration occurs in late summer and early fall along the Goshute Mountain Range at approximately 9,000 feet elevation. A thorough review and analysis of the best available information on this topic should be included in the EIS process.

Impacts from the deployment of chaff and flares will likely prove limited. However, an analysis of the potential for wildfire and chemical alteration to aquatic and terrestrial resources seems logical. Several species, which are strongly on the radar of the U.S. Fish and Wildlife Service (Service), including pygmy rabbit (*Brachylagus idahoensis*) and greater sage-grouse (*Centrocercus urophasianus*), would be negatively influenced by loss of habitat due to wildfire. Both species have been petitioned for listing under the Endangered Species Act of 1973, as amended (Act), numerous times and litigation is ongoing. Close inspection of the potential wildfire hazard is warranted. Although a cursory literature review suggests the chemical composition of chaff and flares are likely benign to terrestrial habitats (*i.e.*, soils), impacts to aquatic resources appear to be less clear. Several aquatic species recognized under the Act occur in the area. Additionally, there are several fish and aquatic macroinvertebrate species with special management status recognized by other federal land management agencies (*i.e.*, Bureau of Land Management, U.S. Forest Service) present. It appears reasonable and prudent to include analysis of potential impacts to these aquatic resources from any anticipated "fallout".

The Migratory Bird Treaty Act (16 U.S.C. 703-712) is the primary legislation in the United States established to conserve migratory birds. The Service is the Federal agency within the United States responsible for administering and enforcing the statute. In addition to the potential impact to migratory birds described above (*i.e.*, noise disturbance, habitat loss), direct bird mortality from collision may be realized during the course of the action. The extent of this potential impact is not known. A full review of this topic and quantification of the scope of this impact would be warranted.

The Service appreciates the efforts undertaken by the U.S. Air Force to engage us in the EIS process, especially during the early phase of planning. Furthermore, we appreciate your awareness of the need for species conservation in the area. Based on our review of the limited materials provided for the proposed action, it appears that through proper planning and implementation of appropriate mitigation measures potential impacts are readily avoidable. If you have any questions or require additional information, please contact me or Steve Abele at 775-861-6300.

Sincerely,


for Robert D. Williams
Field Supervisor

Ms. Sheryl Parker

File No. 2008-FA-0073

cc:

Field Supervisor, U. S. Fish and Wildlife Service, Utah Field Office, Salt lake City, Utah



JIM GIBBONS
Governor

MICHAEL E. FISCHER
Department Director

STATE OF NEVADA
DEPARTMENT OF CULTURAL AFFAIRS

State Historic Preservation Office
100 N. Stewart Street
Carson City, Nevada 89701
(775) 684-3448 • Fax (775) 684-3442
www.nvshpo.org

RONALD M. JAMES
State Historic Preservation Officer

December 19, 2007

Sheryl Parker
White Elk MOA EIS Project Manager
HQ ACC/A7PP
129 Andrews Street Suite 102
Langley AFB VA 23665-2769

RE: Environmental Impact Statement (EIS) for the White Elk Military Operations Area (MOA), Hill Air Force Base, White Pine and Elko County.

Dear Ms. Parker:

The Nevada State Historic Preservation Office (SHPO) reviewed your request for information. The SHPO has the following comments on the proposed undertaking:

- In order for this office to review the effect of the undertaking on historic properties and therefore the identification efforts that are necessary to identify affected resources, this office needs information about the potential for changes to the visual and audible characteristics of the area below the MOA. Will this project introduce any noise or chaff in the area below the MOA? If so, the U.S. Air Force should inventory the area below the MOA to identify historic properties that could be affected by the undertaking.
- The U.S. Air Force should contact members of the public that could have an interest in historic properties in the area below the MOA. For example, it appears from the map provided with your submission, although it is difficult to decipher, that eligible segments of the Lincoln Highway may be located below the MOA.
- The U.S. Air Force should contact affected Native American tribes that might be concerned about the effect of the undertaking on properties of religious and cultural significance.

If you have any questions concerning this correspondence, please contact me by phone at (775) 684-3443 or by E-mail at rlpalmer@clan.lib.nv.us.

Sincerely,

Rebecca Lynn Palmer
Review and Compliance Officer, Archaeologist



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

BEN SHELLY
VICE-PRESIDENT

December 11, 2007

Mr. Timothy A. Byers, Brigadier General, USAF
Department of the Air Force, HQ ACC/A7
129 Andrews Street, Suite 102
Langley AFB, VA. 23665

Subject: Tribal Consultation Request. Proposing to establish the White Elk Military Operations Area (MOA) west of the Utah Test and Training Range. The White Elk Military Operations Area would lie directly beneath the existing Currie and Tippet Air Traffic Control Assigned Airspace (ATCAA), with the exception of the southwest corner, and within the state of Nevada.

Dear Mr. Byers:

Our apology for an oversight and missing the deadline date of our response to your request, please note that in reference to your letter of November 26, 2007, the Historic Preservation Department – Traditional Culture Program (HPD-TCP) received a request for consultation regarding the above undertaking and/or project. After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** any Navajo traditional cultural properties or historical properties.

However, if there are any inadvertent discoveries made during the course of the undertaking, your agency shall cease all operations within the project area. HPD-TCP shall be notified by telephone within 24 hours and a formal letter be sent within 72 hours. All work shall be suspended until mitigation measures/procedures have been developed in consultation with the Navajo Nation.

The HPD-TCP appreciates your agency's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have additional concerns and/or questions, do not hesitate to contact me. My contact information is listed below.

Sincerely,

Mr. Tony Joe, Program Manager
Historic Preservation Department – Traditional Culture Program

Tel: 928.871.7688

Fax: 928.871.7886

E-mail: tonyjoe@navajo.org

TCP 08-291
File: Office file/chrono

ATTACHMENT E

Federal Register Notice of Availability

EIS No. 20080308, Final EIS, SFW, WA, Hanford Reach National Monument Comprehensive Conservation Plan, Management of Monument Resources, Programs and Visitors for the Next 15 Years, Adams, Benton, Franklin, and Grant Counties, WA, Wait Period Ends: 09/15/2008, Contact: Charles Houghten 503-231-2096.

EIS No. 20080309, Draft EIS, TVA, GA, Mountain Reservoirs Land Management Plan, Implementation, Proposes to Develop a Plan for Managing Nine Mountain Reservoirs: Chatuge, Hiwassee, Blue Ridge, Nottely, Ocoees 1, 2, and 3, Apalachia, and Fontana Reservoirs, Fannin, Towns, and Union Counties, GA; Cherokee, Clay, Graham, and Swain Counties, North Carolina; and Polk County, TN, Comment Period Ends: 09/29/2008, Contact: Kenneth P. Parr 423-751-4254.

EIS No. 20080310, Final EIS, COE, NC, West Onslow Beach and New River Inlet (Topsail Beach) Shore Protection Project, Storm Damages and Beach Erosion Reduction, Funding, Pender County, NC, Wait Period Ends: 09/15/2008, Contact: Glenn McIntosh 910-251-4671.

EIS No. 20080311, Final EIS, FTA, CO, Denver Union Station (DUS) Project, Transportation Improvement, Multimodal Transportation Center for the Metro Denver Region, Funding and NPDES Permit, City and County, Denver, CO, Wait Period Ends: 09/29/2008, Contact: James Barr 202-493-2633.

EIS No. 20080312, Draft EIS, FHW, SC, Southern Evacuation Lifeline Project, Proposed New Location Freeway Which Would Provide Improved Hurricane Evacuation, Congestion Relief, Improved Access to Services East and West of the Waccamaw River, Horry and Georgetown Counties, SC, Comment Period Ends: 09/29/2008, Contact: Patrick Tyndall 803-765-5460.

EIS No. 20080313, Draft EIS, UAF, UT, White Elk Military Operations Area, Propose to Establish a New Military Operations Area (MOA) Linked to the Utah Test and Training Range (UTTR) Airspaces, Hill Air Force Base, UT, Comment Period Ends: 09/29/2008, Contact: Sheryle Parker 757-764-9334.

Amended Notices

EIS No. 20080305, Final EIS, CGD, AL, Bienville Offshore Energy Terminal (BOET) Deepwater Port License Application (Docket # USCG-2006-24644), Proposes to Construct and Operate a Liquefied Natural Gas Receiving and Regasification Facility,

Outer Continental Shelf of the Gulf of Mexico, South of Fort Morgan, AL, Wait Period Ends: 09/22/2008, Contact: Ltc. Hannah Kim 202-372-1438. Revision to FR Notice Published 8/08/2008: Correction to Wait Period from 09/08/2008 to 9/22/2008.

Dated: August 12, 2008.

Ken Mittelholtz,

Environmental Protection Specialist, Office of Federal Activities.

[FR Doc. E8-18976 Filed 8-14-08; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-ORD-2008-0200; FRL-8705-5]

Board of Scientific Counselors, Water Quality Mid-Cycle Subcommittee Meetings—2008

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of meetings.

SUMMARY: Pursuant to the Federal Advisory Committee Act, Pub. L. 92-463, the Environmental Protection Agency (EPA), Office of Research and Development (ORD), gives notice of two meetings of the Board of Scientific Counselors (BOSC) Water Quality Mid-Cycle Subcommittee.

DATES: The meetings (teleconference calls) will be held on Thursday, September 4, 2008 and Monday, September 15, 2008. Both calls are scheduled to be held from 1 p.m. to 3 p.m. Eastern Standard Time. The meetings may adjourn early if all business is finished. Requests for the draft agendas or for making oral presentations at the conference calls will be accepted up to one business day before the meeting.

ADDRESSES: Participation in the meetings will be by teleconference only—meeting rooms will not be used. Members of the public may obtain the call-in number and access code for the call from Susan Peterson, the Designated Federal Officer, whose contact information is listed under the “FOR FURTHER INFORMATION CONTACT” section of this notice. Submit your comments, identified by Docket ID No. EPA-HQ-ORD-2008-0200, by one of the following methods:

- <http://www.regulations.gov>: Follow the on-line instructions for submitting comments.

- *E-mail:* Send comments by electronic mail (e-mail) to: ORD.Docket@epa.gov, Attention Docket ID No. EPA-HQ-ORD-2008-0200.

- *Fax:* Fax comments to: (202) 566-0224, Attention Docket ID No. EPA-HQ-ORD-2008-0200.

- *Mail:* Send comments by mail to: Board of Scientific Counselors, Water Quality Mid-Cycle Subcommittee—2008 Docket, Mailcode: 28221T, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Attention Docket ID No. EPA-HQ-ORD-2008-0200.

- *Hand Delivery or Courier.* Deliver comments to: EPA Docket Center (EPA/DC), Room B102, EPA West Building, 1301 Constitution Avenue, NW., Washington, DC, Attention Docket ID No. EPA-HQ-ORD-2008-0200. Note: This is not a mailing address. Such deliveries are only accepted during the docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-ORD-2008-0200. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an “anonymous access” system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov>, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is

ATTACHMENT F

Newspaper Advertisements for Notice of Availability

**NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL IMPACT STATEMENT
WHITE ELK MILITARY OPERATIONS AREA**

The United States Air Force (Air Force) has prepared a Draft Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act. The Air Force in cooperation with the Federal Aviation Administration, proposes to establish a new Military Operations Area (MOA) underlying existing training airspace at the western edge of the Utah Test and Training Range (UTTR). The MOA, identified as the White Elk MOA, would create additional special use airspace in northeastern Nevada in order to provide training opportunities for F-16 pilots not consistently available in the existing UTTR airspace.

The 45-day public comment period for the Draft EIS begins on the date of publication of this Notice of Availability in the Federal Register; therefore, comments will be accepted through September 29, 2008. Written comments on the Draft EIS should be directed to HQ ACC/A7PP, 129 Andrews Street, Suite 122, Langley Air Force Base, Virginia 23665-2769, ATTN: Ms. Sheryl Parker. To obtain a copy of the EIS, please contact Ms. Sheryl Parker at (757) 764-9334. The Draft EIS is also available on the Web at www.acclanning.org.

Public hearings on the Draft EIS are scheduled as follows:

<i>City/Town</i>	<i>Date</i>	<i>Location</i>
Ely, NV	Tuesday, September 2	Bristlecone Pine Convention Center, 150 Sixth Street
Elko, NV	Wednesday, September 3	Elko Convention Center, 700 Moren Way
West Wendover, NV	Thursday, September 4	West Wendover Branch Library, 590 Camper Drive

Public hearings will be held from 5 to 8 p.m. All meetings will start with an open house from 5 to 6 p.m., at which time Air Force personnel will be available to answer questions about the proposal. The formal public hearing will begin at 6 p.m. After a brief presentation to provide the results outlined in the Draft EIS, the floor will be opened for comments from the public pertaining to the environmental analysis and findings. If all commentors have had an opportunity to comment, the Hearing Officer may adjourn the meeting before 8 p.m.

For additional information, please contact Ms. Barbara Fisher at the 75 ABW Public Affairs Office, Hill AFB, Utah, at (801) 775-3652.

ATTACHMENT G

Federal Register Notice Extension of Public Comment Period

Dated: October 2, 2008.

Susan K. Fawcett,

Records Officer, USPTO, Office of the Chief Information Officer, Customer Information Services Group,

[FR Doc. E8-23810 Filed 10-7-08; 8:45 am]

BILLING CODE 3510-16-P

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meetings

TIME AND DATE: 11 a.m. Thursday, October 9, 2008.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Commission Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: DCIO Rule Enforcement Review Meeting.

CONTACT PERSON FOR MORE INFORMATION: Sauntia S. Warfield, 202-418-5084.

Sauntia S. Warfield,

Staff Assistant.

[FR Doc. E8-23957 Filed 10-6-08; 11:30 am]

BILLING CODE 6351-01-P

DEPARTMENT OF DEFENSE

Department of the Air Force

Extension of Public Comment Period for the Proposed White Elk Military Operations Area Draft Environmental Impact Statement

ACTION: Extension of Public Comment Period for the Proposed White Elk Military Operations Area Draft Environmental Impact Statement.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321, *et seq.*), the Council on Environmental Quality Regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations (CFR) Parts 1500-1508), and Air Force's Environmental Impact Analysis Process as implemented by 32 CFR Part 989, the United States Air Force (Air Force) is issuing this notice to advise the public of our intent to provide an extension of the public comment period for the Proposed White Elk Military Operations Area (MOA) Draft Environmental Impact Statement (EIS).

The original comment period was scheduled to close on 29 September 2008 (**Federal Register**: August 15, [Volume 73, Number 159] [Notices] [Page 47948-47949]. The comment period now ends on 13 November 2008.

FOR FURTHER INFORMATION CONTACT:

Please submit written comments to Ms. Sheryl Parker, White Elk MOA EIS Project Manager, HQ ACC/A7PP, 129 Andrews St., Ste. 122, Langley AFB, VA 23665-5399. For additional information, please contact Ms. Barbara Fisher at 75 ABW Public Affairs Office, Hill AFB, Utah, at (801) 775-3652.

Bao-Anh Trinh,

Air Force Federal Register Liaison Officer.

[FR Doc. E8-23859 Filed 10-7-08; 8:45 am]

BILLING CODE 5001-05-P

DEPARTMENT OF EDUCATION

Submission for OMB Review; Comment Request

AGENCY: Department of Education.
SUMMARY: The IC Clearance Official, Regulatory Information Management Services, Office of Management invites comments on the submission for OMB review as required by the Paperwork Reduction Act of 1995.

DATES: Interested persons are invited to submit comments on or before November 7, 2008.

ADDRESSES: Written comments should be addressed to the Office of Information and Regulatory Affairs, Attention: Education Desk Officer, Office of Management and Budget, 725 17th Street, NW., Room 10222, Washington, DC 20503. Commenters are encouraged to submit responses electronically by e-mail to oira_submission@omb.eop.gov or via fax to (202) 395-6974. Commenters should include the following subject line in their response "Comment: [insert OMB number], [insert abbreviated collection name, e.g., "Upward Bound Evaluation"]". Persons submitting comments electronically should not submit paper copies.

SUPPLEMENTARY INFORMATION: Section 3506 of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35) requires that the Office of Management and Budget (OMB) provide interested Federal agencies and the public an early opportunity to comment on information collection requests. OMB may amend or waive the requirement for public consultation to the extent that public participation in the approval process would defeat the purpose of the information collection, violate State or Federal law, or substantially interfere with any agency's ability to perform its statutory obligations. The IC Clearance Official, Regulatory Information Management Services, Office of Management, publishes that notice containing proposed information

collection requests prior to submission of these requests to OMB. Each proposed information collection, grouped by office, contains the following: (1) Type of review requested, e.g. new, revision, extension, existing or reinstatement; (2) Title; (3) Summary of the collection; (4) Description of the need for, and proposed use of, the information; (5) Respondents and frequency of collection; and (6) Reporting and/or Recordkeeping burden. OMB invites public comment.

Dated: October 2, 2008.

Angela C. Arrington,

IC Clearance Official, Regulatory Information Management Services, Office of Management.

Office of Special Education and Rehabilitative Services

Type of Review: Extension.

Title: Case Service Report.

Frequency: Annually.

Affected Public: State, Local, or Tribal Gov't, SEAs or LEAs (primary).

Reporting and Recordkeeping Hour Burden:

Responses: 80.

Burden Hours: 3,600.

Abstract: As required by Sections 13, 101(a)(10), 106 and 626 of the Rehabilitation Act, the data are submitted annually by State Vocational Rehabilitation agencies. The data contain personal and program-related characteristics, including economic outcomes of persons with disabilities whose service records are closed.

Requests for copies of the information collection submission for OMB review may be accessed from <http://edicsweb.ed.gov>, by selecting the "Browse Pending Collections" link and by clicking on link number 3647. When you access the information collection, click on "Download Attachments" to view. Written requests for information should be addressed to U.S. Department of Education, 400 Maryland Avenue, SW., LBJ, Washington, DC 20202-4537. Requests may also be electronically mailed to ICDocketMgr@ed.gov or faxed to 202-401-0920. Please specify the complete title of the information collection when making your request.

Comments regarding burden and/or the collection activity requirements should be electronically mailed to ICDocketMgr@ed.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339.

[FR Doc. E8-23818 Filed 10-7-08; 8:45 am]

BILLING CODE 4000-01-P

APPENDIX C

CONSULTATION



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Ely District Office

HC33 Box 33500 (702 N. Industrial Way)

Ely, Nevada 89301-9408

http://www.blm.gov/nv/st/en/fo/ely_field_office.html

In Reply Refer To:
8111 (NVL0000)
NV-04-09-1828

JUL 28 2009

Jaynie Hirschi, Archaeologist
Hill AFB 75 CEG/CEV
7274 Wardleigh Rd
Hill AFB, UT 84056-5137

Dear Ms. Hirschi:

This letter is in regards to the final Cultural Resource Report (8111 NV-04-09-1828) *Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada*. After review of this report, submitted to our office in June, 2009 for review and concurrence, it is found to be acceptable to our cultural resource staff.

We are requesting that a five year monitoring plan be implemented regarding historic structures within the Cherry Creek Mining District in relation to the effects of sonic boom activity. It will be necessary to coordinate the monitoring plan with both the Ely District cultural staff as well as the Nevada State Historic Preservation Office. If you have any questions please contact Kurt Braun at (775) 289-1870 or Lisa Gilbert at (775) 289-1862.

Sincerely,

Michael J. Herder
District Manager
Ely District Office



DEPARTMENT OF THE AIR FORCE
75TH CIVIL ENGINEER GROUP (AFMC)
HILL AIR FORCE BASE UTAH

4 August 2009

Mr. Robert T. Elliott
Chief, Environmental Management Division
75th CEG/CEV
7274 Wardleigh Road
Hill Air Force Base, Utah 84056-5137

Ms. Rebecca Palmer
Nevada State Historic Preservation Office
100 N. Stewart St.
Carson City, NV 89710

Dear Ms. Palmer

The United States Air Force (USAF) proposes to establish a Military Operations Area (MOA), known as the White Elk MOA, in northeastern Nevada over portions of White Pine and Elko Counties for use by the 388th Fighter Wing (388 FW) and other USAF aircraft. The 388th FW is based out of Hill Air Force Base (AFB), Utah.

In terms of areal coverage, the White Elk MOA would overlay 1,674 square nautical miles. The area is already used for overflights by military and civilian aircraft. Establishment of the MOA would not result in the horizontal expansion of the Utah Test and Training Range (UTTR); no new lands would underlie the White Elk MOA. The proposed White Elk MOA would extend from 14,000 feet Mean Sea Level (MSL) to 18,000 feet MSL and directly underlie the existing Currie/Tippet Air Traffic Control Assigned Airspace (ATCAA), with the exception of the southwest corner. The Area of Potential Effect (APE) is defined as the lands under the proposed White Elk MOA and the Currie/Tippet ATCAA, covering approximately 1,071,360 acres. All proposed training operations, supersonic operations above 18,000 feet MSL, and the use of chaff and flares would occur within this area. Expected project effects include changes in audible and visual setting, overpressures from sonic booms, and changes in setting due to the presence of chaff or flares.

Three National Register of Historic Places-listed properties are located beneath the affected airspace—Fort Schellbourne, the McGill Drug Store, and the American Legion Hall in McGill. An additional 43 historic properties are present within the lands beneath the affected airspace that contain structures or the remains of structures such as foundations. There are also a number of ghost towns known in the area, although most are undocumented.

As part of government-to-government consultation specific to the proposed action, the USAF contacted 37 American Indian Tribes, colonies, and other organizations regarding the White Elk MOA proposal. Groups contacted included those who live in the vicinity of the project area and

those who have ancestral ties to the land. The list was compiled from the 19 tribes contacted by Hill AFB as part of their consultation process and additional tribes included in consultation with the Elko and Ely Districts of the Bureau of Land Management (BLM). Consultation with American Indian groups did not reveal any information about traditional cultural properties under the affected airspace. In addition, public scoping meetings were held in Elko, Ely, and West Wendover, Nevada.

Although the proposed undertaking would result in aircraft overflights, use of chaff and flares, and allow for supersonic flight, none of these activities will adversely affect historic properties in the APE. The relatively high altitude of the aircraft (mostly above 30,000 feet MSL) would result in negligible change to the visual setting. Chaff and flare detritus would be unobtrusive given the very large size of the APE. There would be an imperceptible change in subsonic noise due to the proposed action. Finally, the low frequency of sonic booms and the low peak overpressures of those sonic booms would ensure that there would be no adverse effect to historic structures.

A copy of the final cultural resources report, *Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada* (8111 NV-04-09-1828), has been prepared for review (Attachment 1). Based on the attached report, Hill AFB has determined the proposed establishment of the White Elk MOA will have no adverse effect to historic properties [36 CFR §800.5(b)]. The final report was sent to both the Elko and Ely Districts of the BLM for review. The Elko District BLM had no comments. The Ely District BLM has provided concurrence regarding the determination of no adverse effects, with the stipulation that a five-year monitoring plan be implemented regarding historic structures within the Cherry Creek Mining District in relation to the effects of sonic boom activity (Attachment 2, Ely District BLM White Elk MOA Concurrence Letter). This monitoring plan is currently being developed by the USAF and will be coordinated and finalized with both the Ely District BLM and the Nevada State Historic Preservation Office. I request your concurrence on this determination as specified in 36 CFR §800.

An Environmental Impact Statement has been prepared for the proposed project. If you would like a copy of this document to review or should you or your staff have any questions about the project, please contact our archaeologist, Ms. Jaynie Hirschi, 75th CEG/CEVOR, at (801) 775-6920 or at jaynie.hirschi@hill.af.mil.

Sincerely


ROBERT T. ELLIOTT, P.E., YF-02, DAF
Chief, Environmental Management Division
75th Civil Engineer Group

Attachments:

1. *Section 106 Documentation for the Proposed White Elk Military Operations Area, White Pine and Elko Counties, Nevada* (8111 NV-04-09-1828)
2. Ely District BLM White Elk MOA Concurrence Letter

cc:

Mr. Bryan Hockett, Elko District BLM

Ms. Lisa Gilbert, Ely District BLM



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

21 Oct 2009

[Handwritten signature]
Davis Gonzales, Chairman
Te-Moak Tribe of Western Shoshone Indians
of Nevada
525 Sunset Street
Elko, NV 89801

Dear Chairman Gonzales

The U.S. Force has proposed establishing a new airspace area in Nevada for F-16 training primarily by aircraft stationed at Hill Air Force Base, Utah. This new airspace area, identified as the White Elk Military Operations Area would be used primarily by aircraft stationed at Hill Air Force Base, Utah (see attached map for proposed airspace location).

We are currently preparing an Environmental Impact Statement (EIS) to analyze potential environmental impacts of this new airspace. As part of this process, scoping meetings were held in December 2007. During one of these meetings, held 19 December 2007 at the Elko Convention Center, a member of your tribe mentioned that there may be ceremonial or religious sites associated with the Te-Moak Tribe under the proposed airspace. We have not been able to verify that information and need help in doing so.

We ask for your assistance in identifying any potential impact to areas of traditional importance to the Te-Moak tribe which underlie the proposed airspace. We would be happy to meet with you, at your convenience, to discuss the proposal and any concerns you and your tribe may have. My point of contact for the ongoing EIS process is Ms. Sheryl Parker. She will be contacting your office as a follow up to this correspondence and can arrange a meeting for further discussions between the Air Force and the Te-Moak Tribe. She can be reached at (757) 764-9334, or by e-mail at sheryl.parker@langley.af.mil.

Sincerely,

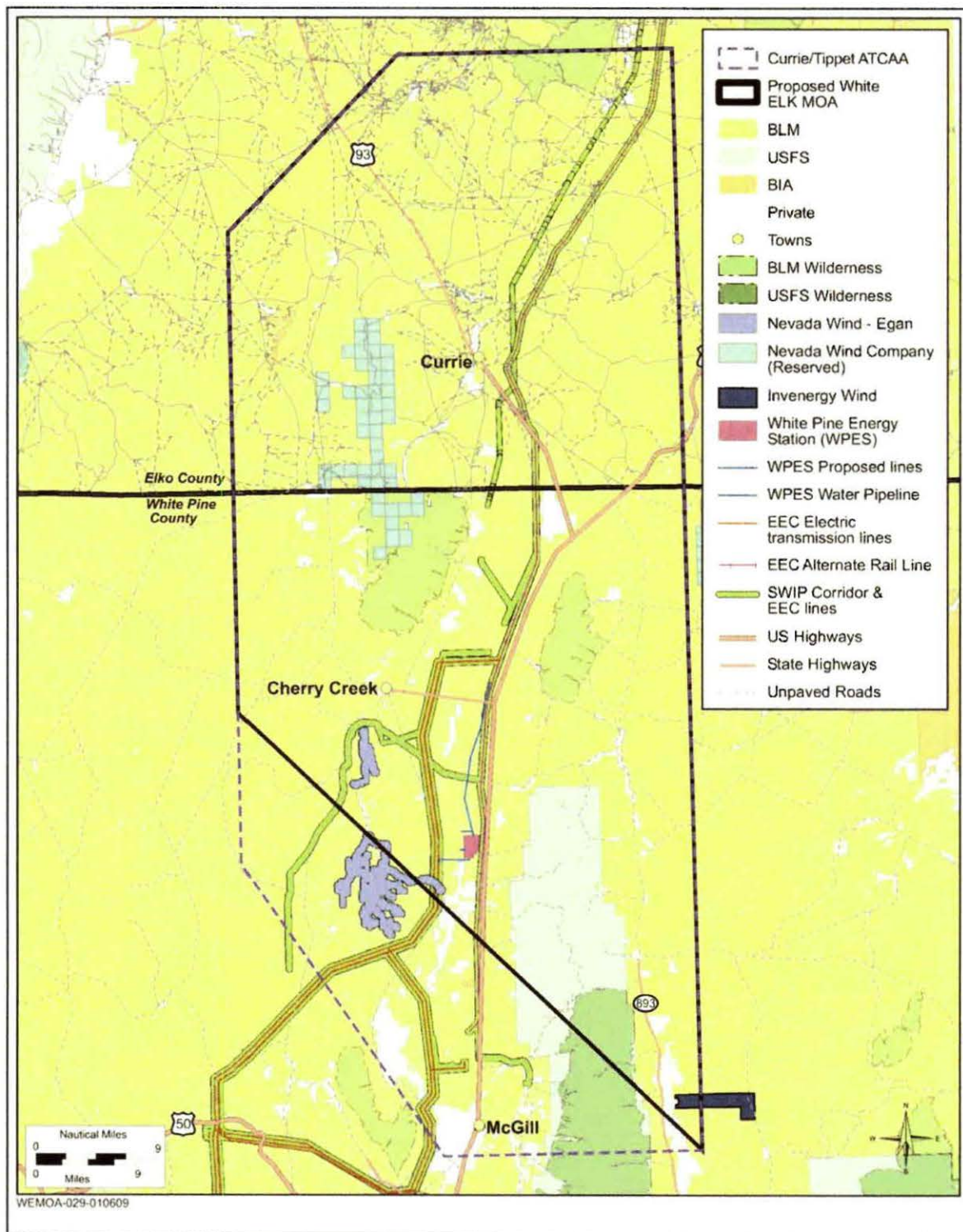
Respectfully,

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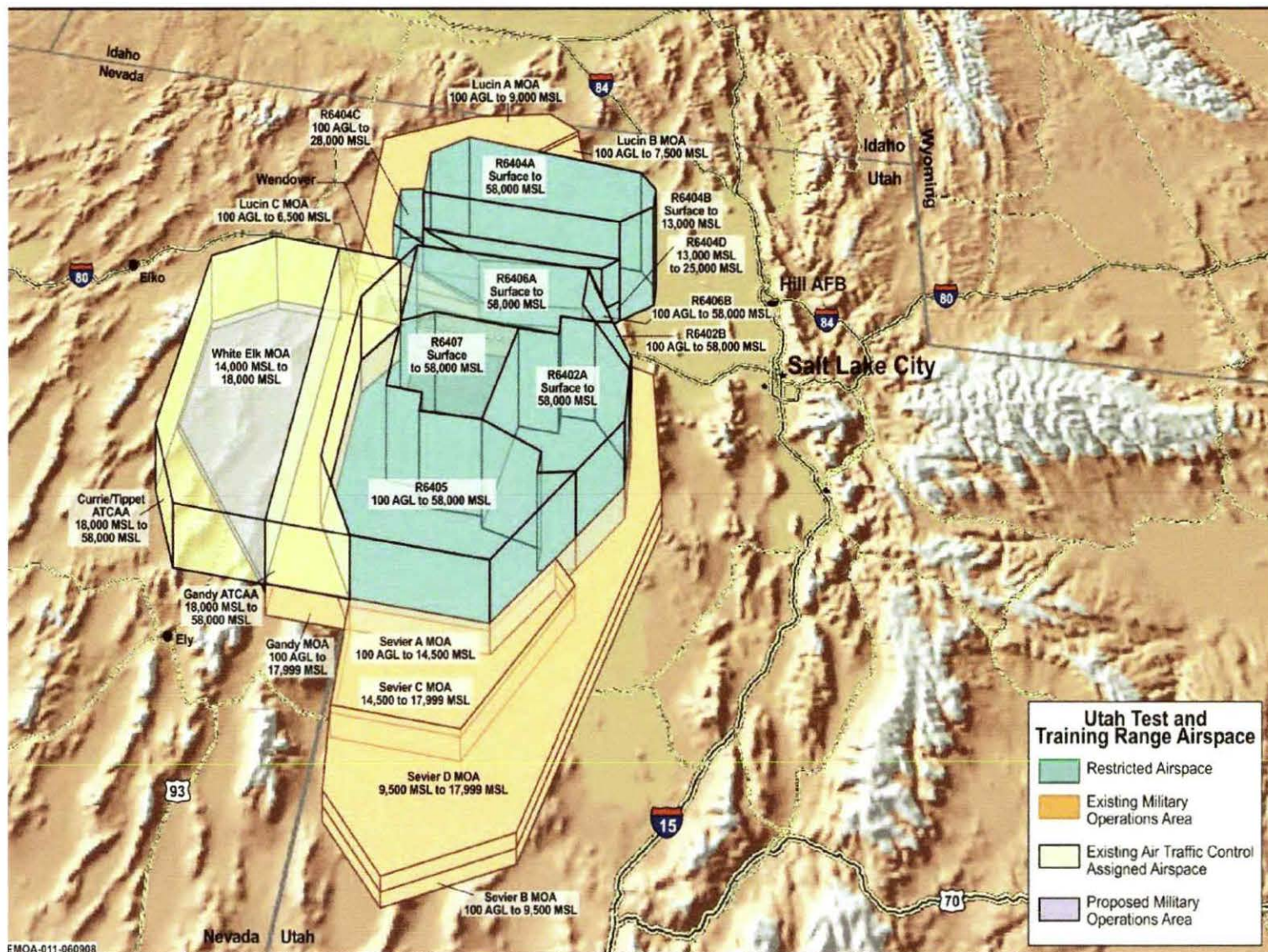
DIMASALANG F. JUNIO, Colonel, USAF
Chief, Program Division (A7P)

cc: Gerald Temoke, Chairperson, Elko Band
75 CEV

Global Power For America



Currie/Tippet ATCAA and Proposed White Elk MOA





STATE OF NEVADA
DEPARTMENT OF CULTURAL AFFAIRS

State Historic Preservation Office
100 N. Stewart Street
Carson City, Nevada 89701
(775) 684-3448 • Fax (775) 684-3442
www.nvshpo.org

MICHAEL E. FISCHER
Department Director

RONALD M. JAMES
State Historic Preservation Officer

October 27, 2010

Dimasalang F. Junio
Colonel
U.S. Air Force
Chief, Programs Division
Headquarters, Air Combat Command
129 Andrews Street Suite 102
Langley AFB VA 23665-2769

RE: Establishment of the White Elko Military Operations Area (MOA) in White Pine and Elko Counties (Undertaking #2010-0409).

Dear Colonel Junio:

The Nevada State Historic Preservation Office (SHPO) reviewed the additional information you provided concerning the subject undertaking. The SHPO concurs with the U.S. Air Force's determination that a reasonable and good faith effort has been made to identify historic properties that could be affected by the undertaking.

The SHPO concurs with the U.S. Air Force's determination that the proposed undertaking will not pose an adverse effect to historic properties.

If you have any questions concerning this correspondence, please feel free to contact me at (775) 684-3443 or by e-mail at Rebecca.Palmer@nevadaculture.org.

Sincerely,

Rebecca Lynn Palmer, Deputy
State Historic Preservation Officer

APPENDIX D
CHARACTERISTICS OF CHAFF

APPENDIX D

CHARACTERISTICS OF CHAFF

The proposed action would employ RR-188 training chaff. When released from an aircraft, chaff initially forms a sphere, and then disperses in the air. The chaff effectively reflects radar signals in various bands (depending on the length of the chaff fibers) and forms a very large image or electronic “cloud” of reflected signals on a radar screen. The aircraft is obscured from radar detection by the cloud, which allows the aircraft to safely maneuver or to leave an area. Since chaff can obstruct radar, its use is coordinated with the Federal Aviation Administration (FAA). RR-188 training chaff has D and E band dipoles removed to avoid interference with FAA radar.

Chaff Composition

The RR-188 chaff used during training consists of extremely small strands (or dipoles) of an aluminum-coated crystalline silica core. The chaff components (silica, aluminum, and stearic acid) are generally prevalent in the environment. Silica (silicon dioxide) belongs to the most common mineral group, silicate minerals. Silica is inert in the environment and does not present an environmental concern with respect to soil chemistry. Aluminum is the third most abundant element in the earth’s crust, forming some of the most common minerals, such as feldspars, micas, and clays. Natural soil concentrations of aluminum ranging from 10,000 to 300,000 parts per million have been documented (Lindsay 1979). These levels vary depending on numerous environmental factors, including climate, parent rock materials from which the soils were formed, vegetation, and soil moisture alkalinity/acidity. The solubility of aluminum is greater in acidic and highly alkaline soils than in neutral pH conditions. Aluminum eventually oxidizes to Al_2O_3 (aluminum oxide) over time, depending on its size and form and the environmental conditions. Stearic acid is an animal fat that degrades when exposed to light and air.

Chaff fibers have an anti-clumping agent (Neofat – 90 percent stearic acid and 10 percent palmitic acid) to assist with rapid dispersal of the fibers during deployment (Air Force 1997). Chaff is made as small and light as possible so that it will remain in the air long enough to confuse enemy radar. The chaff fibers are approximately the thickness of a human hair (i.e., generally 1 millimeter in diameter), and range in length from 0.3 to over 1 inch. The weight of chaff material in the RR-188 cartridge is 95 grams (Air Force 1997).

A single bundle of chaff consists of the filaments in an 8-inch long rectangular tube or cartridge, a plastic piston, a cushioned spacer and a 1-inch by 1-inch plastic end cap that falls to the ground when chaff is dispensed. The spacer is a spongy material (felt) designed to absorb the force of release. Figure D-1 illustrates the components of a chaff cartridge. Table D-1 lists the components of the silica core and the aluminum coating. Table D-2 presents the characteristics of RR-188 chaff.

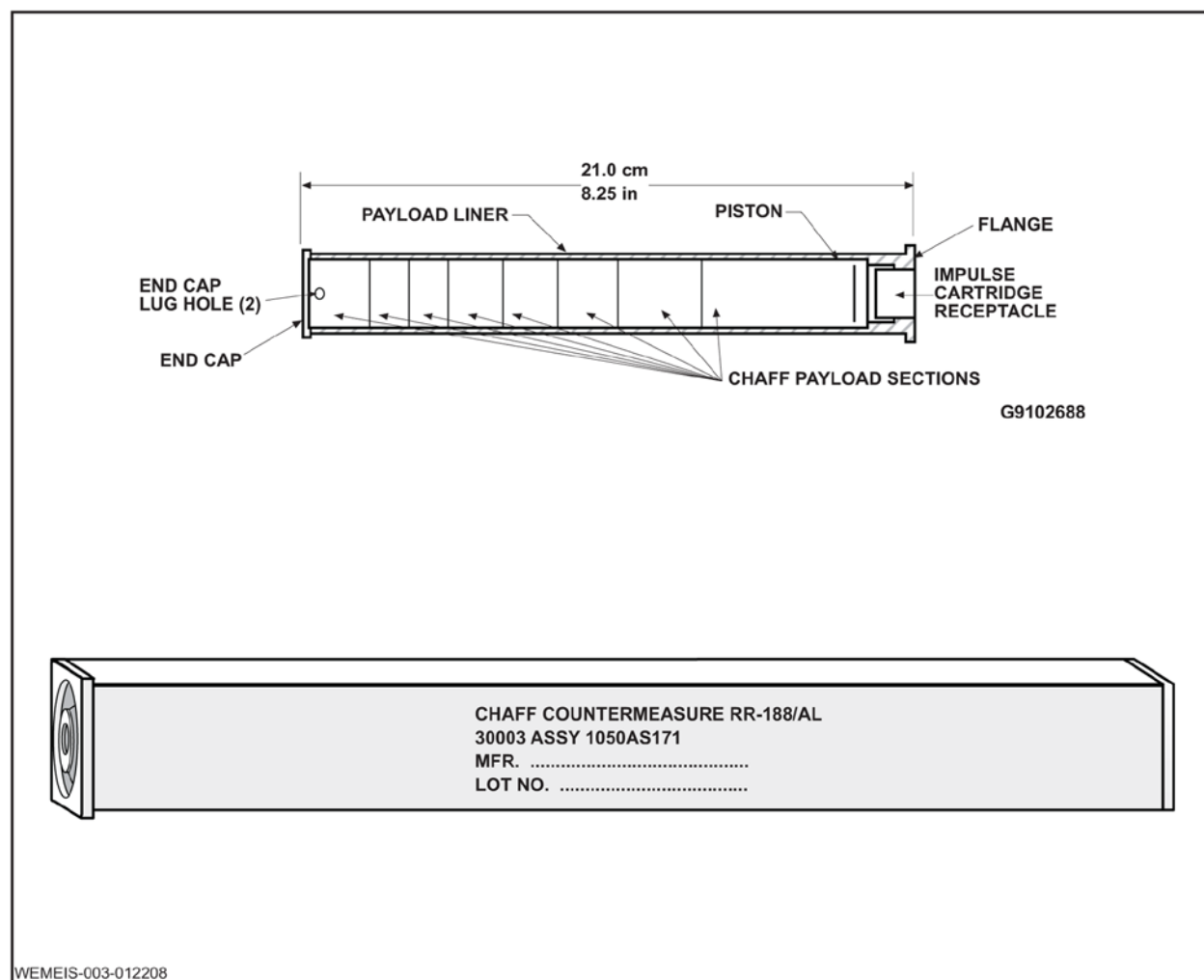


Figure D-1. RR-188/AL Chaff Cartridge (Source: Air Force 2000)

Chaff Ejection

Chaff is ejected from aircraft pyrotechnically using a BBU-35/B impulse cartridge. Pyrotechnic ejection uses hot gases generated by an explosive impulse charge. The gases push the small piston down the chaff-filled tube. A small plastic end cap is ejected, followed by the chaff fibers. The plastic tube remains within the aircraft. Residual material from the ejection consists of a small, square piece of plastic 1/8-inch thick (i.e., the piston and the end cap) and the felt spacer. Table D-3 lists the characteristics of BBU-35/B impulse cartridges used to pyrotechnically eject chaff.

Table D-1. Components of RR-188 Chaff		
<i>Element</i>	<i>Chemical Symbol</i>	<i>Percent (by weight)</i>
Silica Core		
Silicon dioxide	SiO ₂	52-56
Alumina	Al ₂ O ₃	12-16
Calcium Oxide and Magnesium Oxide	CaO and MgO	16-25
Boron Oxide	B ₂ O ₃	8-13
Sodium Oxide and Potassium Oxide	Na ₂ O and K ₂ O	1-4
Iron Oxide	Fe ₂ O ₃	1 or less
Aluminum Coating (Typically Alloy 1145)		
Aluminum	Al	99.45 minimum
Silicon and Iron	Si and Fe	0.55 maximum
Copper	Cu	0.05 maximum
Manganese	Mn	0.05 maximum
Magnesium	Mg	0.05 maximum
Zinc	Zn	0.05 maximum
Vanadium	V	0.05 maximum
Titanium	Ti	0.03 maximum
Others		0.03 maximum

Source: Air Force 2000

Table D-2. Characteristics of RR-188 Chaff	
<i>Attribute</i>	<i>RR-188</i>
Aircraft	A-10, F-15, F-16
Composition	Aluminum coated glass
Ejection Mode	Pyrotechnic
Configuration	Rectangular tube cartridge
Size	8 x 1 x 1 inches (8 cubic inches)
Number of Dipoles	5.46 million
Dipole Size (cross-section)	1 mil (diameter)
Impulse Cartridge	BBU-35/B
Other Comments	Cartridge stays in aircraft; less interference with FAA radar (no D and E bands)

Source: Air Force 2000

Table D-3. BBU-35/B Impulse Charges Used to Eject Chaff	
<i>Component</i>	<i>BBU-35/B</i>
Overall Size	0.625 inches x 0.530 inches
Overall Volume	0.163 inches ³
Total Explosive Volume	0.034 inches ³
Bridgewire	Trophet A 0.0025 inches x 0.15 inches
Initiation Charge	0.008 cubic inches 130 mg 7,650 psi boron 20% potassium perchlorate 80%*
Booster Charge	0.008 cubic inches 105 mg 7030 psi boron 18% potassium nitrate 82%
Main Charge	0.017 cubic inches 250 mg Loose fill RDX **pellets 38.2% Potassium perchlorate 30.5% Boron 3.9% Potassium nitrate 15.3% Super floss 4.6% Viton A 7.6%

Source: Air Force 2000

Upon release from an aircraft, chaff forms a cloud approximately 30 meters in diameter in less than one second under normal conditions. Quality standards for chaff cartridges require that they demonstrate ejection of 98 percent of the chaff in undamaged condition, with a reliability of 95 percent at a 95 percent confidence level. They must also be able to withstand a variety of environmental conditions that might be encountered during storage, shipment, and operation.

Table D-4 lists performance requirements for chaff.

Table D-4. Performance Requirements for Chaff		
<i>Condition</i>	<i>Performance Requirement</i>	
High Temperature	Up to +165 degrees Fahrenheit (°F)	
Low Temperature	Down to -65°F	
Temperature Shock	Shock from -70°F to + 165°F	
Temperature Altitude	Combined temperatures altitude conditions up to 70,000 feet	
Humidity	Up to 95 percent relative humidity	
Sand and Dust	Sand and dust encountered in desert regions subject to high sand dust conditions and blowing sand and dust particles	
Accelerations/Axis	<u>G-Level</u>	<u>Time (minute)</u>
Transverse-Left (X)	9.0	1
Transverse-Fight (-X)	3.0	1
Transverse (Z)	4.5	1
Transverse (-Z)	13.5	1
Lateral-Aft (-Y)	6.0	1
Lateral-Forward (Y)	6.0	1
Shock (Transmit)	Shock encountered during aircraft flight	
Vibration	Vibration encountered during aircraft flight	
Free Fall Drop	Shock Encountered during unpackaged item drop	
Vibration (Repetitive)	Vibration encountered during rough handling of packaged item	
Three Foot Drop	Shock encountered during rough handling of packaged item	

Note: Cartridge must be capable of total ejection of chaff from the cartridge line under these conditions

Source: Air Force 2000

Policies and Regulations on Chaff Use

Current Air Force policy on use of chaff was established by the Airspace Subgroup of Headquarter (HQ) Air Force Flight Standards Agency (AFFSA) in 1993 (Memorandum from John R. Williams, 28 June 1993). It requires units to obtain frequency clearance from the Air Force Frequency Management Center and the FAA prior to using chaff to ensure that training with chaff is conducted on a non-interference basis. This ensures electromagnetic compatibility between the FAA, the Federal Communications Commission (FCC), and Department of Defense (DoD) agencies. The Air Force does not place any restrictions on the use of chaff provided those conditions are met (Air Force 1997).

AFI 13-201 U.S. Air Force Airspace Management, July 1994. This guidance establishes practices to decrease disturbance from flight operations that might cause adverse public reaction. It emphasizes the Air Force's responsibility to ensure that the public is protected to the maximum extent practicable from hazards and effects associated with flight operations.

AFI 11-214 Aircrew and Weapons Director and Terminal Attack Controller Procedures for Air Operations, July 1994. This instruction delineates procedures for chaff and flare use. It prohibits use unless in an approved area.

AFI 13-212, Range Planning Operations and CJCSM 3212.02, Performing Electronic Attack in the United States and Canada for Tests, Training, and Exercises provide similar procedures for conducting training chaff and self-protection flare use in approved areas.

REFERENCES

Air Force. 1997. Environmental Effects of Self-Protection Chaff and Flares. Prepared for Headquarters Air Combat Command, Langley Air Force Base, Virginia.

_____. 2000. Environmental Assessment of the Expansion of the Use of Self-Protection Chaff and Flares at the Utah Test and Training Range, Hill Air Force Base, Utah. Prepared for Headquarters Air Force Reserve Command Environmental Division, Robins AFB, Georgia. January.

APPENDIX E

CHARACTERISTICS OF FLARES

APPENDIX E

CHARACTERISTICS OF FLARES

The proposed action would employ M-206 self-protection flares. Self-protection flares are magnesium pellets that, when ignited, burn for a brief period of time (i.e., 3.5 to 5 seconds) at 2,000 degrees Fahrenheit (F). The burn temperature is hotter than the exhaust of an aircraft and, therefore attracts and decoys heat-seeking weapons targeted on the aircraft. This appendix describes flare composition, ejection, and associated regulations.

Flare Composition

Self-protection flares are primarily mixtures of magnesium and Teflon (polytetrafluorethylene) molded into rectangular shapes (Air Force 1997). Longitudinal grooves provide space for materials that aid in ignition such as:

- First fire materials: potassium perchlorate, boron powder, magnesium powder, barium chromate, Viton A, or Fluorel binder
- Immediate fire materials: magnesium powder, Teflon, Viton A, or Fluorel
- Dip coat: Magnesium powder, Teflon, Viton A or Fluorel

Typically, flares are wrapped with an aluminum-filament-reinforced tape and inserted into an aluminum (0.03 inches thick) case that is closed with a felt spacer and a small plastic end cap (Air Force 1997). The top of the case has a pyrotechnic impulse cartridge that is activated electrically to produce hot gases that push a piston, the flare material, and the end cap out of the aircraft into the airstream. Table E-1 provides a description of the M-206 flare components. Figure E-1 is an illustration of an M-206. Typical flare composition and residual material are summarized in Table E-2.

Table E-1. Description of M-206 Self-Protection Flare	
<i>Attribute</i>	<i>M-206</i>
Aircraft	A-10, AC-130, C-17, F-16
Mode	Parasitic
Configuration	Rectangle
Size	1 x 1 x 8 inches (8 cubic inches)
Impulse Cartridge	M-796
Safety and Initiation Device	None
Weight (nominal)	6.9 ounces
Comments	Simulator version (T-1) uses potassium chlorate, powdered sugar, and yellow dye smoke charge

Source: Air Force 1997

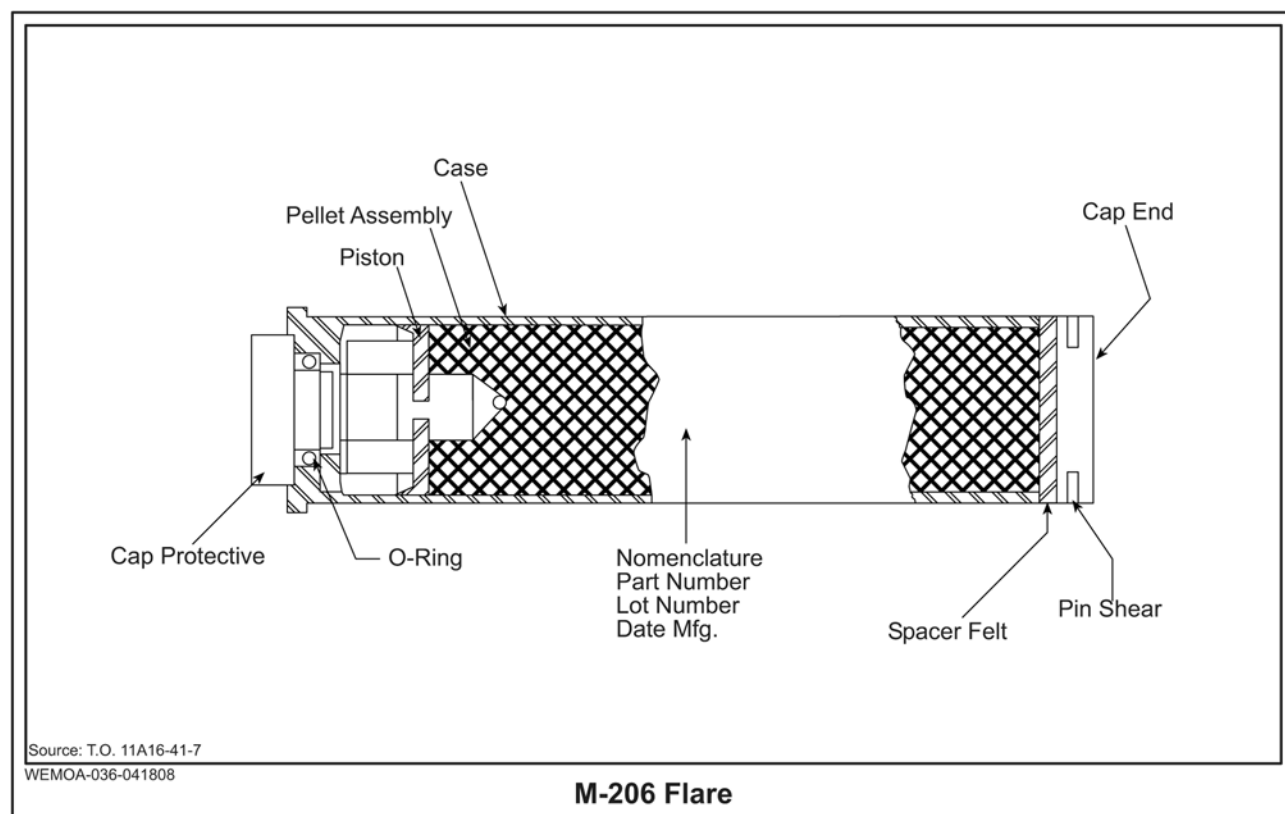


Figure E-1. M-206 Self Protection Flare Cartridge (Source: Air Force 1997)

Table E-2. Typical Composition and Residual Material of Self-Protection Flares	
Part	Components
Combustible	
Flare Pellet	Polytetrafluorethylene (Teflon) $(-[\text{C}_2\text{F}_4]_n - n=20,000 \text{ units})$ Magnesium (Mg) Fluoroelastomer (Viton, Fluorel, Hytemp)
First Fire Mixture	Boron (B) Magnesium (Mg) Potassium perchlorate (KClO_4) Barium chromate (BaCrO_4) Fluoroelastomer
Intermediate Fire/Dip Coat	Polytetrafluorethylene (Teflon) $(-[\text{C}_2\text{F}_4]_n - n=20,000 \text{ units})$ Magnesium (Mg) Fluoroelastomer
Assemblage (Residual Components)	
Aluminum Wrap	Mylar or filament tape bonded to aluminum tape
End Cap	Plastic (nylon)
Felt Spacers	Felt pads (0.25 inches by cross section of flare)
Piston	Plastic (nylon, tefzel, zyetl)

Source: Air Force 1997

Flare Ejection

Self-protection flares such as the M-206 use an M-796 impulse cartridge (Air Force 1997). The flare is ignited in the aluminum case before it leaves the aircraft. Holes in the piston permit ignitor gases to contact the first fire mixture on top of the flare pellet. The parasitic type flare is less likely to produce duds. The plastic end cap falls to the ground following flare ejection. Flares are tested to ensure they meet performance requirements in terms of ejection, ignition, and effective radiant intensity. If the number of failures exceed the upper control quality assurance acceptance level (approximately 99 percent must be judged reliable), the flares are returned to the manufacturer. Figure E-2 is an illustration of an M-796 impulse cartridge. Table E-3 describes the components of M-796 impulse charges.

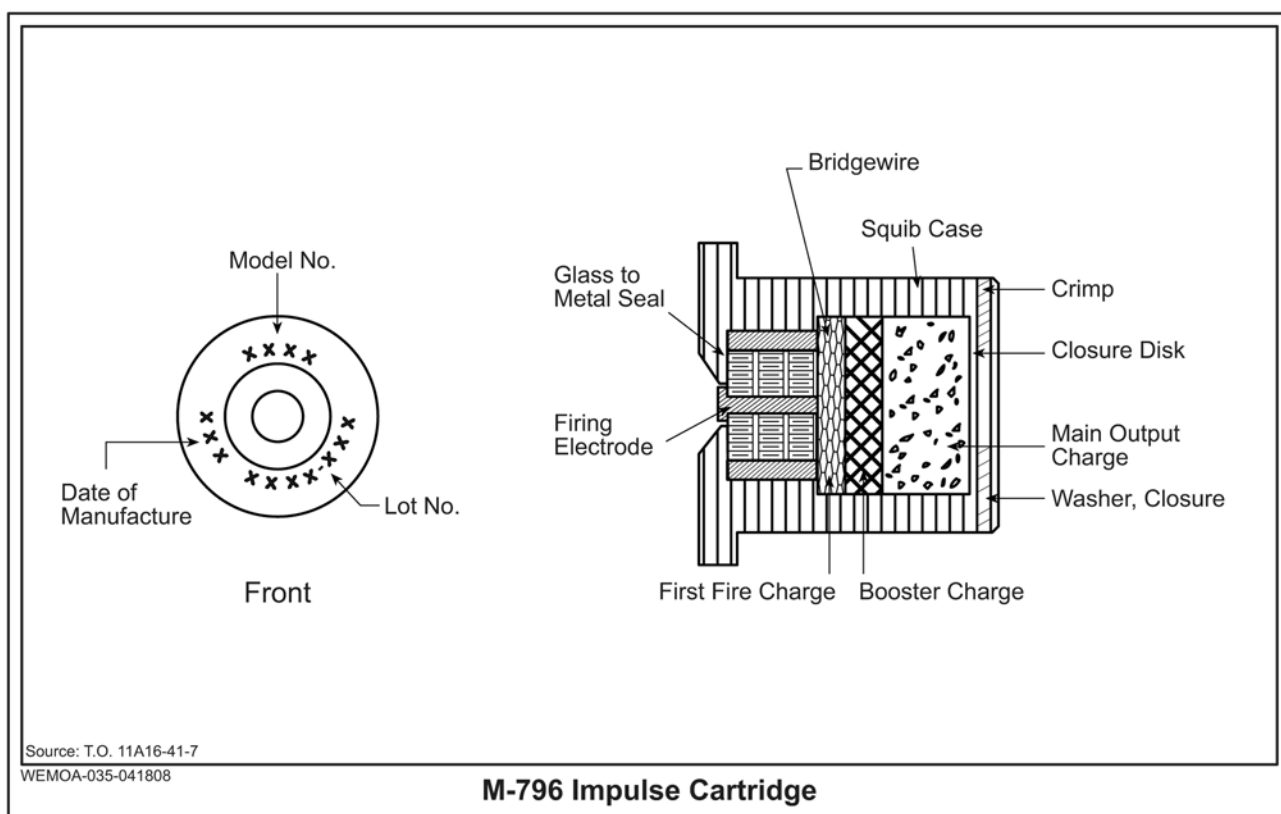


Figure E-2. M-796 Impulse Cartridge (Air Force 1997)

Table E-3. Components of M-796 Impulse Charges	
Component	M-796
Overall Size	0.449 x 0.530 inches
Overall Volume	0.104 cubic inches
Total Explosive Volume	0.033 cubic inches
Bridgewire	Trophet A 0.0025 inches (diameter)
Closure Disk	Scribed disc, washer
Initiation Charge	
Volume	0.011 cubic inches
Weight	100 mg
Compaction	5,500 psi
Composition	20% boron 80% potassium nitrate
Booster Charge	
Volume	0.011 cubic inches
Weight	70 mg
Compaction	5,500 psi
Composition	18% boron 82% potassium nitrate
Main Charge	
Volume	0.011 cubic inches
Weight	185 me
Compaction	Loose fill
Composition	Hercules HPC-1 (~40% nitrocellulose)

Source: Air Force 1997

Policies and Regulations Addressing Flare Use

Air Force policy on flare use was established by the Airspace Subgroup of Headquarters (HQ) Air Force Flight Standards Agency (AFFSA) in 1993 (Memorandum from John R. Williams, 28 June 1993) (Air Force 1997). This policy permits flare drops over military-owned or controlled land and in Warning Areas. Flare drops are permitted in Military Operations Areas (MOAs) and Military Training Routes (MTRs) only when an environmental analysis has been completed. Minimum altitudes must be adhered to. Flare drops must also comply with established written range regulations and procedures.

AFI 11-214 prohibits using flare systems except in approved areas with intent to dispense, and sets certain conditions for employment of flares. Flares are authorized over government-owned and controlled property and over-water Warning Areas with no minimum altitude restrictions when there is no fire hazard. If a fire hazard exists, minimum altitudes will be maintained in accordance with the applicable directive or range order. AFI 11-214 (22 December 2005) prescribes a minimum flare employment altitude of 2,000 feet AGL over non-government owned or controlled property (Air Force 2005).

AFI 13-201, Air Force Airspace Management and **AFI 13-212, Range Planning and Operations** provide similar procedures for conducting training chaff and self-protection flare use in approved areas.

REFERENCES

Air Force. 1997. Environmental Effects of Self-Protection Chaff and Flares. Prepared for Headquarters Air Combat Command, Langley Air Force Base, Virginia.

APPENDIX F

NOISE

APPENDIX F

NOISE

Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (such as hearing loss or damage to structures) or subjective judgments (community annoyance). Noise analysis thus requires a combination of physical measurement of sound, physical and physiological effects, plus psycho- and socio-acoustic effects.

Section 1.0 of this appendix describes how sound is measured and summarizes noise impacts in terms of community acceptability and land use compatibility. Section 2.0 gives detailed descriptions of the effects of noise that lead to the impact guidelines presented in Section 1.0. Section 3.0 provides a description of the specific methods used to predict aircraft noise, including a detailed description of sonic booms.

1.0 NOISE DESCRIPTORS AND IMPACT

Aircraft operating in military airspace generate two types of sound. One is “subsonic” noise, which is continuous sound generated by the aircraft’s engines and also by air flowing over the aircraft itself. The other is sonic booms (where authorized for supersonic), which are transient impulsive sounds generated during supersonic flight. These are quantified in different ways.

Section 1.1 describes the characteristics which are used to describe sound. Section 1.2 describes the specific noise metrics used for noise impact analysis. Section 1.3 describes how environmental impact and land use compatibility are judged in terms of these quantities.

1.1 Quantifying Sound

Measurement and perception of sound involve two basic physical characteristics: amplitude and frequency. Amplitude is a measure of the strength of the sound and is directly measured in terms of the pressure of a sound wave. Because sound pressure varies in time, various types of pressure averages are usually used. Frequency, commonly perceived as pitch, is the number of times per second the sound causes air molecules to oscillate. Frequency is measured in units of cycles per second, or hertz (Hz).

Amplitude. The loudest sounds the human ear can comfortably hear have acoustic energy one trillion times the acoustic energy of sounds the ear can barely detect. Because of this vast range, attempts to represent sound amplitude by pressure are generally unwieldy. Sound is, therefore, usually represented on a logarithmic scale with a unit called the decibel (dB). Sound measured on the decibel scale is referred to as a sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Because of the logarithmic nature of the decibel scale, sounds levels do not add and subtract directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example:

$$60 \text{ dB} + 60 \text{ dB} = 63 \text{ dB, and}$$

$$80 \text{ dB} + 80 \text{ dB} = 83 \text{ dB.}$$

The total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

$$60.0 \text{ dB} + 70.0 \text{ dB} = 70.4 \text{ dB.}$$

Because the addition of sound levels behaves differently than that of ordinary numbers, such addition is often referred to as “decibel addition” or “energy addition.” The latter term arises from the fact that the combination of decibel values consists of first converting each decibel value to its corresponding acoustic energy, then adding the energies using the normal rules of addition, and finally converting the total energy back to its decibel equivalent.

The difference in dB between two sounds represents the ratio of the amplitudes of those two sounds. Because human senses tend to be proportional (i.e., detect whether one sound is twice as big as another) rather than absolute (i.e., detect whether one sound is a given number of pressure units bigger than another), the decibel scale correlates well with human response.

Under laboratory conditions, differences in sound level of 1 dB can be detected by the human ear. In the community, the smallest change in average noise level that can be detected is about 3 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, and this relation holds true for loud sounds and for quieter sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound *intensity* but only a 50 percent decrease in perceived *loudness* because of the nonlinear response of the human ear (similar to most human senses).

The one exception to the exclusive use of levels, rather than physical pressure units, to quantify sound is in the case of sonic booms. As described in Section 3.2, sonic booms are coherent waves with specific characteristics. There is a long-standing tradition of describing individual sonic booms by the amplitude of the shock waves, in pounds per square foot (psf). This is particularly relevant when assessing structural effects as opposed to loudness or cumulative community response. In this environmental analysis, sonic booms are quantified by either dB or psf, as appropriate for the particular impact being assessed.

Frequency. The normal human ear can hear frequencies from about 20 Hz to about 20,000 Hz. It is most sensitive to sounds in the 1,000 to 4,000 Hz range. When measuring community response to noise, it is common to adjust the frequency content of the measured sound to correspond to the frequency sensitivity of the human ear. This adjustment is called A-weighting (American National Standards Institute 1988). Sound levels that have been so adjusted are referred to as A-weighted sound levels.

The audible quality of high thrust engines in modern military combat aircraft can be somewhat different than other aircraft, including (at high throttle settings) the characteristic nonlinear crackle of high thrust engines. The spectral characteristics of various noises are accounted for by A-weighting, which approximates the response of the human ear but does not necessarily account for quality. There are other, more detailed, weighting factors that have been applied to sounds. In the 1950s and 1960s, when noise from civilian jet aircraft became an issue, substantial research was performed to determine what characteristics of jet noise were a problem. The metrics Perceived Noise Level and Effective Perceived Noise Level were developed. These accounted for nonlinear behavior of hearing and the importance of low frequencies at high levels, and for many years airport/airbase noise contours were presented in terms of Noise Exposure Forecast, which was based on Perceived Noise Level and Effective Perceived Noise Level. In the 1970s, however, it was realized that the primary intrusive aspect of aircraft noise was the high noise level, a factor which is well represented by A-weighted levels and day-night average sound level (DNL). The refinement of Perceived Noise Level, Effective Perceived Noise Level, and Noise Exposure Forecast was not significant in protecting the public from noise.

There has been continuing research on noise metrics and the importance of sound quality, sponsored by the Department of Defense (DoD) for military aircraft noise and by the Federal Aviation Administration (FAA) for civil aircraft noise. The metric L_{dnmr} , which is described later and accounts for the increased annoyance of rapid onset rate of sound, is a product of this long-term research.

The amplitude of A-weighted sound levels is measured in dB. It is common for some noise analysts to denote the unit of A-weighted sounds by dBA. As long as the use of A-weighting is understood, there is no difference between dB or dBA: it is only important that the use of A-weighting be made clear. In this environmental analysis, A-weighted sound levels are reported as dB.

A-weighting is appropriate for continuous sounds, which are perceived by the ear. Impulsive sounds, such as sonic booms, are perceived by more than just the ear. When experienced indoors, there can be secondary noise from rattling of the building. Vibrations may also be felt. C-weighting (American National Standards Institute 1988) is applied to such sounds. This is a frequency weighting that is relatively flat over the range of human hearing (about 20 Hz to 20,000 Hz) that rolls off above 5,000 Hz and below 50 Hz. In this study, C-weighted sound levels are used for the assessment of sonic booms and other impulsive sounds. As with A-weighting, the unit is dB, but dBC is sometimes used for clarity. In

this study, sound levels are reported in both A-weighting and C-weighting dBs, and C-weighted metrics are denoted when used.

Time Averaging. Sound pressure of a continuous sound varies greatly with time, so it is customary to deal with sound levels that represent averages over time. Levels presented as instantaneous (i.e., as might be read from the display of a sound level meter) are based on averages of sound energy over either 1/8 second (fast) or 1 second (slow). The formal definitions of fast and slow levels are somewhat complex, with details that are important to the makers and users of instrumentation. They may, however, be thought of as levels corresponding to the root-mean-square sound pressure measured over the 1/8-second or 1-second periods.

The most common uses of the fast or slow sound level in environmental analysis is in the discussion of the maximum sound level that occurs from the action, and in discussions of typical sound levels. Figure F-1 is a chart of A-weighted sound levels from typical sounds. Some (air conditioner, vacuum cleaner) are continuous sounds whose levels are constant for some time. Some (automobile, heavy truck) are the maximum sound during a vehicle passby. Some (urban daytime, urban nighttime) are averages over some extended period. A variety of noise metrics have been developed to describe noise over different time periods. These are described in Section 1.2.

1.2 Noise Metrics

Maximum Sound Level

The highest A-weighted sound level measured during a single event in which the sound level changes value as time goes on (e.g., an aircraft overflight) is called the maximum A-weighted sound level or maximum sound level, for short. It is usually abbreviated by ALM, L_{\max} , or $L_{A\max}$. The maximum sound level is important in judging the interference caused by a noise event with conversation, TV or radio listening, sleeping, or other common activities. Table F-1 reflects L_{\max} values for typical aircraft associated with this assessment operating at the indicated flight profiles and power settings.

Table F-1. Representative Maximum Sound Levels (L_{\max})							
Aircraft (engine type)	Power Setting	Power Unit	L_{\max} Values (in dBA) At Varying Distances (In Feet)				
			500	1,000	2,000	5,000	10,000
Takeoff/Departure Operations (at 300 knots airspeed)							
A-10A	6200	NF	99.9	91.7	82.2	68.2	57.8
B-1	97.5%	RPM	126.5	118.3	109.9	98.3	88.7
F-15 (P220)	90%	NC	111.4	104.3	96.6	85	74.7
F-16 (P229)	93%	NC	113.7	106.2	98.1	86.1	75.7
F-22	100%	ETR	119.7	112.4	104.6	93	82.9
Landing/Arrival Operations (at 160 knots airspeed)							
A-10A	5225	NF	97	88.9	78.8	60.2	46.4
B-1	90%	RPM	98.8	91.9	84.5	72.8	62
F-15 (P220)	75%	NC	88.5	81.6	74.3	63.2	53.4
F-16 (P229)	83.5%	NC	92.6	85.5	77.8	66.1	55.6
F-22	43%	ETR	111.3	103.9	95.9	83.9	73.1

Engine Unit of Power: RPM—Revolutions Per Minute; ETR—Engine Thrust Ratio; NC—Engine Core RPM; and NF—Engine Fan RPM. Source: SELCalc2 (Flyover Noise Calculator), Using Noisemap 6/7 and Maximum Omega10 Result as the defaults.

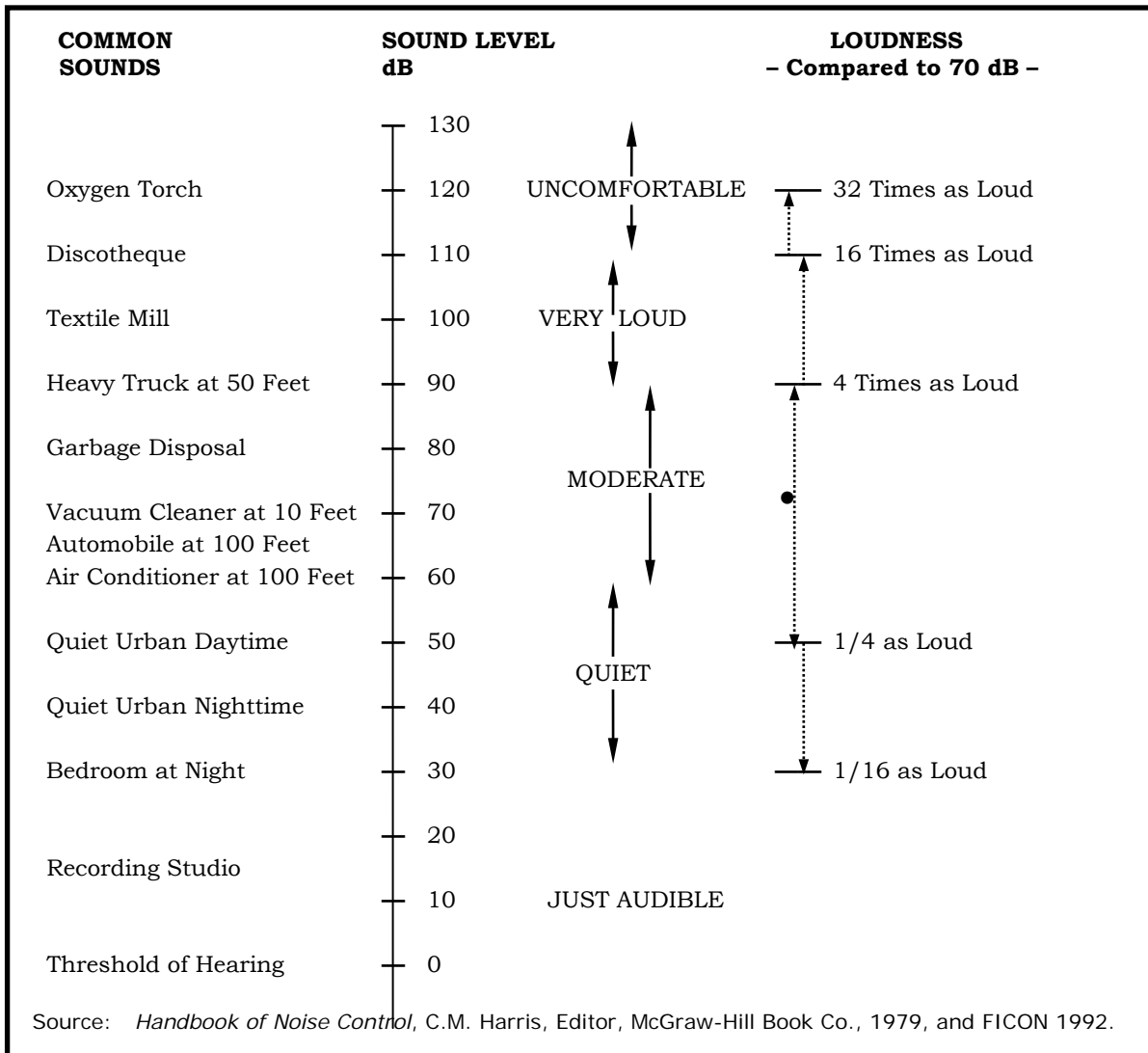


Figure F-1. Typical A-Weighted Sound Levels of Common Sounds

Peak Sound Level

For impulsive sounds, the true instantaneous sound pressure is of interest. For sonic booms, this is the peak pressure of the shock wave, as described in Section 3.2 of this appendix. This pressure is usually presented in physical units of pounds per square foot. Sometimes it is represented on the decibel scale, with symbol Lpk. Peak sound levels do not use either A or C weighting.

Sound Exposure Level

Individual time-varying noise events have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. Although the maximum sound level, described above, provides some measure of the intrusiveness of the event, it alone does not completely describe the total event. The period of time during which the sound is heard is also significant. The Sound Exposure Level (abbreviated SEL or L_{AE} for A-weighted sounds) combines both of these characteristics into a single metric.

SEL is a composite metric that represents both the intensity of a sound and its duration. Mathematically, the mean square sound pressure is computed over the duration of the event, then multiplied by the duration in seconds, and the resultant product is turned into a sound level. It does not directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event. It has been well established in the scientific community that SEL measures this impact much more reliably than just the maximum sound level. Table F-2 shows SEL values corresponding to the aircraft and power settings reflected in Table F-1.

Table F-2. Representative Sound Exposure Levels (SEL)							
Aircraft (engine type)	Power Setting	Power Unit	SEL Values (in dBA) At Varying Distances (In Feet)				
			500	1,000	2,000	5,000	10,000
Takeoff/Departure Operations (at 300 knots airspeed)							
A-10A	6200	NF	102.6	96.2	88.5	76.9	68.3
B-1	97.5%	RPM	129.5	123.1	116.5	107.3	99.3
F-15 (P220)	90%	NC	117.3	112	106.1	97	88.4
F-16 (P229)	93%	NC	116.5	110.8	104.6	95	86.3
F-22	100%	ETR	124.2	118.7	112.7	103.5	95.2
Landing/Arrival Operations (at 160 knots airspeed)							
A-10A	5225	NF	97.9	91.5	83.3	67	55
B-1	90%	RPM	103.4	98.3	92.7	83.4	74.4
F-15 (P220)	75%	NC	94.2	89.2	83.6	74.9	66.9
F-16 (P229)	83.5%	NC	97.4	92.1	86.3	76.9	68.2
F-22	43%	ETR	114.9	109.3	103.1	93.5	84.5

Engine Unit of Power: RPM—Revolutions Per Minute; ETR—Engine Thrust Ratio; NC—Engine Core RPM; and NF—Engine Fan RPM. *Source:* SELCalc2 (Flyover Noise Calculator), Using Noisemap 6/7 and Maximum Omega10 Result as the defaults.

Because the SEL and the maximum sound level are both used to describe single events, there is sometimes confusion between the two, so the specific metric used should be clearly stated.

SEL can be computed for C-weighted levels (appropriate for impulsive sounds), and the results denoted CSEL or L_{CE} . SEL for A-weighted sound is sometimes denoted ASEL. Within this study, SEL is used for A-weighted sounds and CSEL for C-weighted.

Equivalent Sound Level

For longer periods of time, total sound is represented by the equivalent continuous sound pressure level (L_{eq}). L_{eq} is the average sound level over some time period (often an hour or a day, but any explicit time span can be specified), with the averaging being done on the same energy basis as used for SEL. SEL and L_{eq} are closely related, with L_{eq} being SEL over some time period normalized by that time.

Just as SEL has proven to be a good measure of the noise impact of a single event, L_{eq} has been established to be a good measure of the impact of a series of events during a given time period. Also, while L_{eq} is defined as an average, it is effectively a sum over that time period and is, thus, a measure of the cumulative impact of noise.

Day-Night Average Sound Level

Noise tends to be more intrusive at night than during the day. This effect is accounted for by applying a 10 dB penalty to events that occur after 10 pm and before 7 am. If L_{eq} is computed over a 24-hour period with this nighttime penalty applied, the result is the DNL. DNL is the community noise metric recommended by the USEPA (United States Environmental Protection Agency [USEPA] 1974) and has been adopted by most federal agencies (Federal Interagency Committee on Noise 1992). It has been well established that DNL correlates well with long-term community response to noise (Schultz 1978; Finegold *et al.* 1994). This correlation is presented in Section 1.3 of this appendix.

DNL accounts for the total, or cumulative, noise impact at a given location, and for this reason is often referred to as a “cumulative” metric.

It was noted earlier that, for impulsive sounds, such as sonic booms, C-weighting is more appropriate than A-weighting. The day-night average sound level computed with C-weighting is denoted CDNL or L_{Cdn} . This procedure has been standardized, and impact interpretive criteria similar to those for DNL have been developed (Committee on Hearing, Bioacoustics and Biomechanics 1981).

Onset-Adjusted Monthly Day-Night Average Sound Level

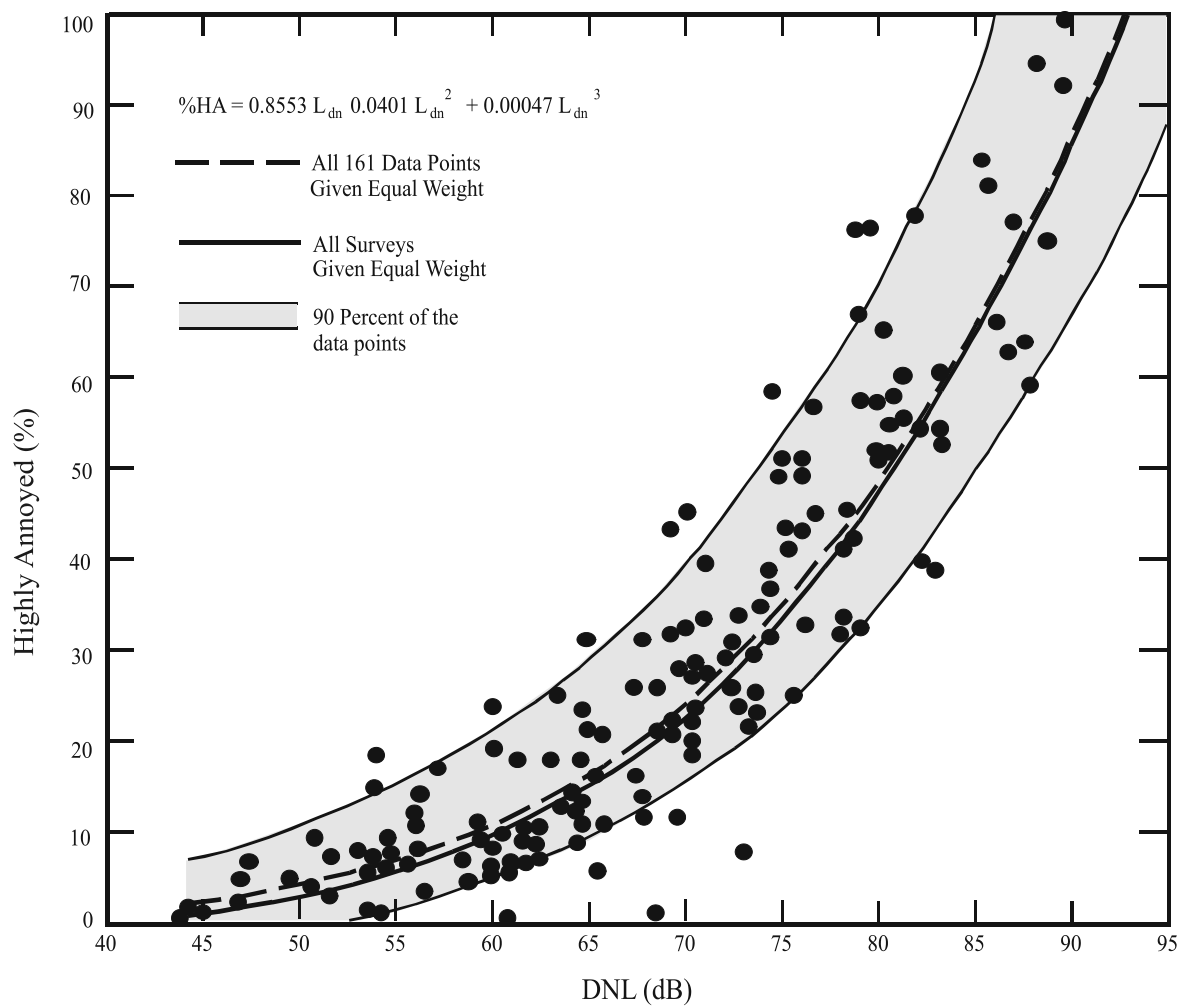
Aircraft operations in military training airspace generate a noise environment somewhat different from other community noise environments. Overflights are sporadic, occurring at random times and varying from day to day and week to week. This situation differs from most community noise environments, in which noise tends to be continuous or patterned. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-air-speed flyover can have a rather sudden onset.

To represent these differences, the conventional DNL metric is adjusted to account for the “surprise” effect of the sudden onset of aircraft noise events on humans (Plotkin *et al.* 1987; Stusnick *et al.* 1992; Stusnick *et al.* 1993). For aircraft exhibiting a rate of increase in sound level (called onset rate) of from 15 to 150 dB per second, an adjustment or penalty ranging from 0 to 11 dB is added to the normal SEL. Onset rates above 150 dB per second require an 11 dB penalty, while onset rates below 15 dB per second require no adjustment. The DNL is then determined in the same manner as for conventional aircraft noise events and is designated as Onset-Rate Adjusted Day-Night Average Sound Level (abbreviated L_{dnmr}). Because of the irregular occurrences of aircraft operations, the number of average daily operations is determined by using the calendar month with the highest number of operations. The monthly average is denoted L_{dnmr} . Noise levels are calculated the same way for both DNL and L_{dnmr} . L_{dnmr} is interpreted by the same criteria as used for DNL.

1.3 Noise Impact

Community Reaction

Studies of long-term community annoyance to numerous types of environmental noise show that DNL correlates well with the annoyance. Schultz (1978) showed a consistent relationship between DNL and annoyance. Schultz’s original curve fit (Figure F-2) shows that there is a remarkable consistency in results of attitudinal surveys which relate the percentages of groups of people who express various degrees of annoyance when exposed to different DNL.



Source: Schultz 1978

Figure F-2. Community Surveys of Noise Annoyance

Another study reaffirmed this relationship (Fidell *et al.* 1991). Figure F-3 (Federal Interagency Committee on Noise 1992) shows an updated form of the curve fit (Finegold *et al.* 1994) in comparison with the original. The updated fit, which does not differ substantially from the original, is the current preferred form. In general, correlation coefficients of 0.85 to 0.95 are found between the percentages of groups of people highly annoyed and the level of average noise exposure. The correlation coefficients for the annoyance of individuals are relatively low, however, on the order of 0.5 or less. This is not surprising, considering the varying personal factors that influence the manner in which individuals react to noise. Nevertheless, findings substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.

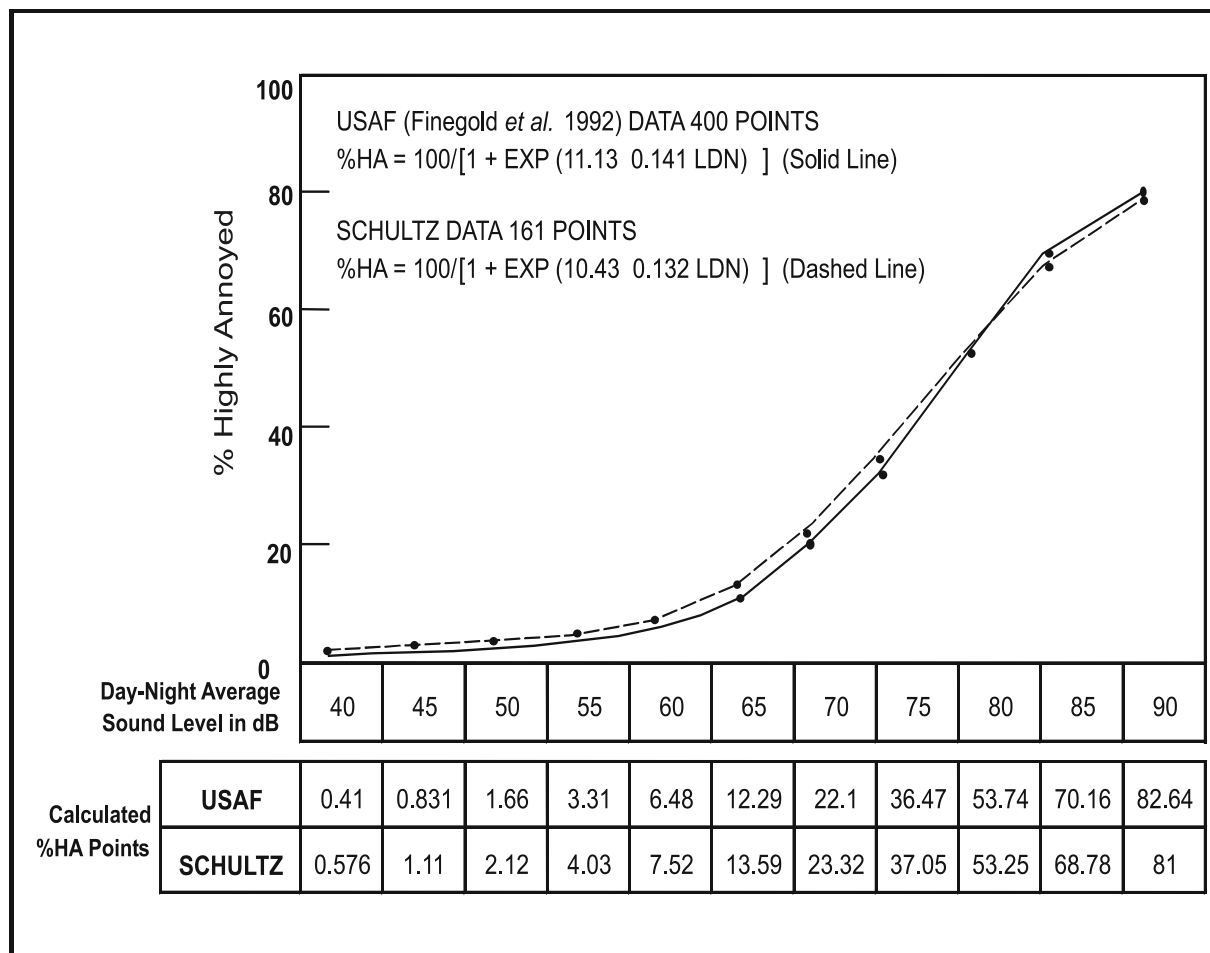


Figure F-3. Response of Communities to Noise; Comparison of Original (Schultz 1978) and Current (Finegold *et al.* 1994) Curve Fits

As noted earlier for SEL, DNL does not represent the sound level heard at any particular time, but rather represents the total sound exposure. DNL accounts for the sound level of individual noise events, the duration of those events, and the number of events. Its use is endorsed by the scientific community (American National Standards Institute 1980, 1988, 2005; USEPA 1974; Federal Interagency Committee on Urban Noise 1980; Federal Interagency Committee on Noise 1992).

While DNL is the best metric for quantitatively assessing cumulative noise impact, it does not lend itself to intuitive interpretation by non-experts. Accordingly, it is common for environmental noise analyses to include other metrics for illustrative purposes. A general indication of the noise environment can be presented by noting the maximum sound levels which can occur and the number of times per day noise events will be loud enough to be heard. Use of other metrics as supplements to DNL has been endorsed by federal agencies (Federal Interagency Committee on Noise 1992).

The Schultz curve is generally applied to annual average DNL. In Section 1.2, L_{dnmr} was described and presented as being appropriate for quantifying noise in military airspace. The Schultz curve is used with L_{dnmr} as the noise metric. L_{dnmr} is always equal to or greater than DNL, so impact is generally higher than would have been predicted if the onset rate and busiest-month adjustments were not accounted for.

There are several points of interest in the noise-annoyance relation. The first is DNL of 65 dB. This is a level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like aviation which do cause noise. Areas exposed to DNL above 65 dB are generally not considered suitable for residential use. The second is DNL of 55 dB, which was identified by USEPA as a level "...requisite to protect the public health and welfare with an adequate margin of safety," (USEPA 1974) which is essentially a level below which adverse impact is not expected. The third is DNL of 75 dB. This is the lowest level at which adverse health effects could be credible (USEPA 1974). The very high annoyance levels correlated with DNL of 75 dB make such areas unsuitable for residential land use.

Sonic boom exposure is measured by C-weighting, with the corresponding cumulative metric being CDNL. Correlation between CDNL and annoyance has been established, based on community reaction to impulsive sounds (Committee on Hearing, Bioacoustics and Biomechanics 1981). Values of the C-weighted equivalent to the Schultz curve are different than that of the Schultz curve itself. Table F-3 shows the relation between annoyance, DNL, and CDNL.

Table F-3. Relation Between Annoyance, DNL and CDNL		
<i>DNL</i>	<i>% Highly Annoyed</i>	<i>CDNL</i>
45	0.83	42
50	1.66	46
55	3.31	51
60	6.48	56
65	12.29	60
70	22.10	65

Interpretation of CDNL from impulsive noise is accomplished by using the CDNL versus annoyance values in Table F-3. CDNL can be interpreted in terms of an "equivalent annoyance" DNL. For

example, CDNL of 52, 61, and 69 dB are equivalent to DNL of 55, 65, and 75 dB, respectively. If both continuous and impulsive noise occurs in the same area, impacts are assessed separately for each.

Land Use Compatibility

As noted above, the inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, when a community is considered as a whole, its overall reaction to noise can be represented with a high degree of confidence. As described above, the best noise exposure metric for this correlation is the DNL or L_{dnmr} for military overflights. Impulsive noise can be assessed by relating CDNL to an “equivalent annoyance” DNL, as outlined in Section 1.3.1.

In June 1980, an ad hoc Federal Interagency Committee on Urban Noise published guidelines (Federal Interagency Committee on Urban Noise 1980) relating DNL to compatible land uses. This committee was composed of representatives from DoD, Transportation, and Housing and Urban Development; USEPA; and the Veterans Administration. Since the issuance of these guidelines, federal agencies have generally adopted these guidelines for their noise analyses.

Following the lead of the committee, DoD and FAA adopted the concept of land-use compatibility as the accepted measure of aircraft noise effect. The FAA included the committee’s guidelines in the Federal Aviation Regulations (United States Department of Transportation 1984). These guidelines are reprinted in Table F-4, along with the explanatory notes included in the regulation. Although these guidelines are not mandatory (note the footnote “*” in the table), they provide the best means for determining noise impact in airport communities. In general, residential land uses normally are not compatible with outdoor DNL values above 65 dB, and the extent of land areas and populations exposed to DNL of 65 dB and higher provides the best means for assessing the noise impacts of alternative aircraft actions. In some cases a change in noise level, rather than an absolute threshold, may be a more appropriate measure of impact.

Table F-4. Land-Use Compatibility With Yearly Day-Night Average Sound Levels

Land Use	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65–70	70–75	75–80	80–85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools.....	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoria, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation.....	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking.....	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware, and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication.....	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports.....	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos.....	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation ...	Y	Y	25	30	N	N

Numbers in parentheses refer to notes.

* The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise-compatible land uses.

KEY TO TABLE F-4

Y (YES) = Land Use and related structures compatible without restrictions.

N (No) = Land Use and related structures are not compatible and should be prohibited.

NLR = Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35 = Land Use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structures.

NOTES FOR TABLE F-4

- (1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor-to-indoor NLR of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide an NLR of 20 dB; thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.
- (2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
- (3) Measures to achieve NLR 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
- (4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
- (5) Land-use compatible provided special sound reinforcement systems are installed.
- (6) Residential buildings require an NLR of 25.
- (7) Residential buildings require an NLR of 30.
- (8) Residential buildings not permitted.

2.0 NOISE EFFECTS

The discussion in Section 1.3 presents the global effect of noise on communities. The following sections describe particular noise effects.

2.1 Hearing Loss

Noise-induced hearing loss is probably the best defined of the potential effects of human exposure to excessive noise. Federal workplace standards for protection from hearing loss allow a time-average level of 90 dB over an 8-hour work period, or 85 dB averaged over a 16-hour period. Even the most protective criterion (no measurable hearing loss for the most sensitive portion of the population at the ear's most sensitive frequency, 4,000 Hz, after a 40-year exposure suggests a time-average sound level of 70 dB over a 24-hour period (USEPA 1974). Since it is unlikely that airport neighbors will remain outside their homes 24 hours per day for extended periods of time, there is little possibility of hearing loss below a DNL of 75 dB, and this level is extremely conservative.

2.2 Nonauditory Health Effects

Nonauditory health effects of long-term noise exposure, where noise may act as a risk factor, have not been found to occur at levels below those protective against noise-induced hearing loss, described above. Most studies attempting to clarify such health effects have found that noise exposure levels established for hearing protection will also protect against any potential nonauditory health effects, at least in workplace conditions. The best scientific summary of these findings is contained in the lead paper at the National Institutes of Health Conference on Noise and Hearing Loss, held on January 22–24, 1990, in Washington, D.C., which states “The nonauditory effects of chronic noise exposure, when noise is suspected to act as one of the risk factors in the development of hypertension, cardiovascular disease, and other nervous disorders, have never been proven to occur as chronic manifestations at levels below these criteria (an average of 75 dBA for complete protection against hearing loss for an eight-hour day)” (von Gierke 1990; parenthetical wording added for clarification). At the International Congress (1988) on Noise as a Public Health Problem, most studies attempting to clarify such health effects did not find them at levels below the criteria protective of noise-induced hearing loss; and even above these criteria, results regarding such health effects were ambiguous.

Consequently, it can be concluded that establishing and enforcing exposure levels protecting against noise-induced hearing loss would not only solve the noise-induced hearing loss problem but also any potential nonauditory health effects in the work place.

Although these findings were directed specifically at noise effects in the work place, they are equally applicable to aircraft noise effects in the community environment. Research studies regarding the

nonauditory health effects of aircraft noise are ambiguous, at best, and often contradictory. Yet, even those studies which purport to find such health effects use time-average noise levels of 75 dB and higher for their research.

For example, in an often-quoted paper, two University of California at Los Angeles researchers found a relation between aircraft noise levels under the approach path to Los Angeles International Airport and increased mortality rates among the exposed residents by using an average noise exposure level greater than 75 dB for the “noise-exposed” population (Meecham and Shaw 1979). Nevertheless, three other University of California at Los Angeles professors analyzed those same data and found no relation between noise exposure and mortality rates (Frerichs *et al.* 1980).

As a second example, two other University of California at Los Angeles researchers used this same population near Los Angeles International Airport to show a higher rate of birth defects during the period of 1970 to 1972 when compared with a control group residing away from the airport (Jones and Tauscher 1978). Based on this report, a separate group at the United States Centers for Disease Control performed a more thorough study of populations near Atlanta’s Hartsfield International Airport for 1970 to 1972 and found no relation in their study of 17 identified categories of birth defects to aircraft noise levels above 65 dB (Edmonds 1979).

A review of health effects, prepared by a Committee of the Health Council of The Netherlands (Committee of the Health Council of the Netherlands 1996), analyzed currently available published information on this topic. The committee concluded that the threshold for possible long-term health effects was a 16-hour (6:00 a.m. to 10:00 p.m.) L_{eq} of 70 dB. Projecting this to 24 hours and applying the 10 dB nighttime penalty used with DNL, this corresponds to DNL of about 75 dB. The study also affirmed the risk threshold for hearing loss, as discussed earlier.

In summary, there is no scientific basis for a claim that potential health effects exist for aircraft time-average sound levels below 75 dB.

2.3 Annoyance

The primary effect of aircraft noise on exposed communities is one of annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction on the part of an individual or group (USEPA 1974). As noted in the discussion of DNL above, community annoyance is best measured by that metric.

Because the USEPA Levels Document (USEPA 1974) identified DNL of 55 dB as “. . . requisite to protect public health and welfare with an adequate margin of safety,” it is commonly assumed that 55 dB should be adopted as a criterion for community noise analysis. From a noise exposure perspective, that would be an ideal selection. However, financial and technical resources are generally not available to

achieve that goal. Most agencies have identified DNL of 65 dB as a criterion which protects those most impacted by noise, and which can often be achieved on a practical basis (Federal Interagency Committee on Noise 1992). This corresponds to about 12 percent of the exposed population being highly annoyed. Although DNL of 65 dB is widely used as a benchmark for significant noise impact, and is often an acceptable compromise, it is not a statutory limit, and it is appropriate to consider other thresholds in particular cases.

In this analysis, no specific threshold is used. The noise in the affected environment is evaluated on the basis of the information presented in this appendix and in the body of the environmental analysis.

Community annoyance from sonic booms is based on CDNL, as discussed in Section 1.3. These effects are implicitly included in the “equivalent annoyance” CDNL values in Table F-3, since those were developed from actual community noise impact.

2.4 Speech Interference

Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. The disruption of routine activities in the home, such as radio or television listening, telephone use, or family conversation, gives rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in those who attempt to communicate over the noise. Research has shown that the use of the SEL metric will measure speech interference successfully, and that a SEL exceeding 65 dB will begin to interfere with speech communication.

2.5 Sleep Interference

Sleep interference is another source of annoyance associated with aircraft noise. This is especially true because of the intermittent nature and content of aircraft noise, which is more disturbing than continuous noise of equal energy and neutral meaning.

Sleep interference may be measured in either of two ways. “Arousal” represents actual awakening from sleep, while a change in “sleep stage” represents a shift from one of four sleep stages to another stage of lighter sleep without actual awakening. In general, arousal requires a somewhat higher noise level than does a change in sleep stage.

An analysis sponsored by the Air Force summarized 21 published studies concerning the effects of noise on sleep (Pearsons *et al.* 1989). The analysis concluded that a lack of reliable in-home studies, combined with large differences among the results from the various laboratory studies, did not permit development of an acceptably accurate assessment procedure. The noise events used in the laboratory studies and in

contrived in-home studies were presented at much higher rates of occurrence than would normally be experienced. None of the laboratory studies were of sufficiently long duration to determine any effects of habituation, such as that which would occur under normal community conditions. An extensive study of sleep interference in people's own homes (Ollerhead 1992) showed very little disturbance from aircraft noise.

There is some controversy associated with the studies, so a conservative approach should be taken in judging sleep interference. Based on older data, the USEPA identified an indoor DNL of 45 dB as necessary to protect against sleep interference (USEPA 1974). Assuming a very conservative structural noise insulation of 20 dB for typical dwelling units, this corresponds to an outdoor DNL of 65 dB as minimizing sleep interference.

A 1984 publication reviewed the probability of arousal or behavioral awakening in terms of SEL (Kryter 1984). Figure F-4, extracted from Figure 10.37 of Kryter (1984), indicates that an indoor SEL of 65 dB or lower should awaken less than 5 percent of those exposed. These results do not include any habituation over time by sleeping subjects. Nevertheless, this provides a reasonable guideline for assessing sleep interference and corresponds to similar guidance for speech interference, as noted above.

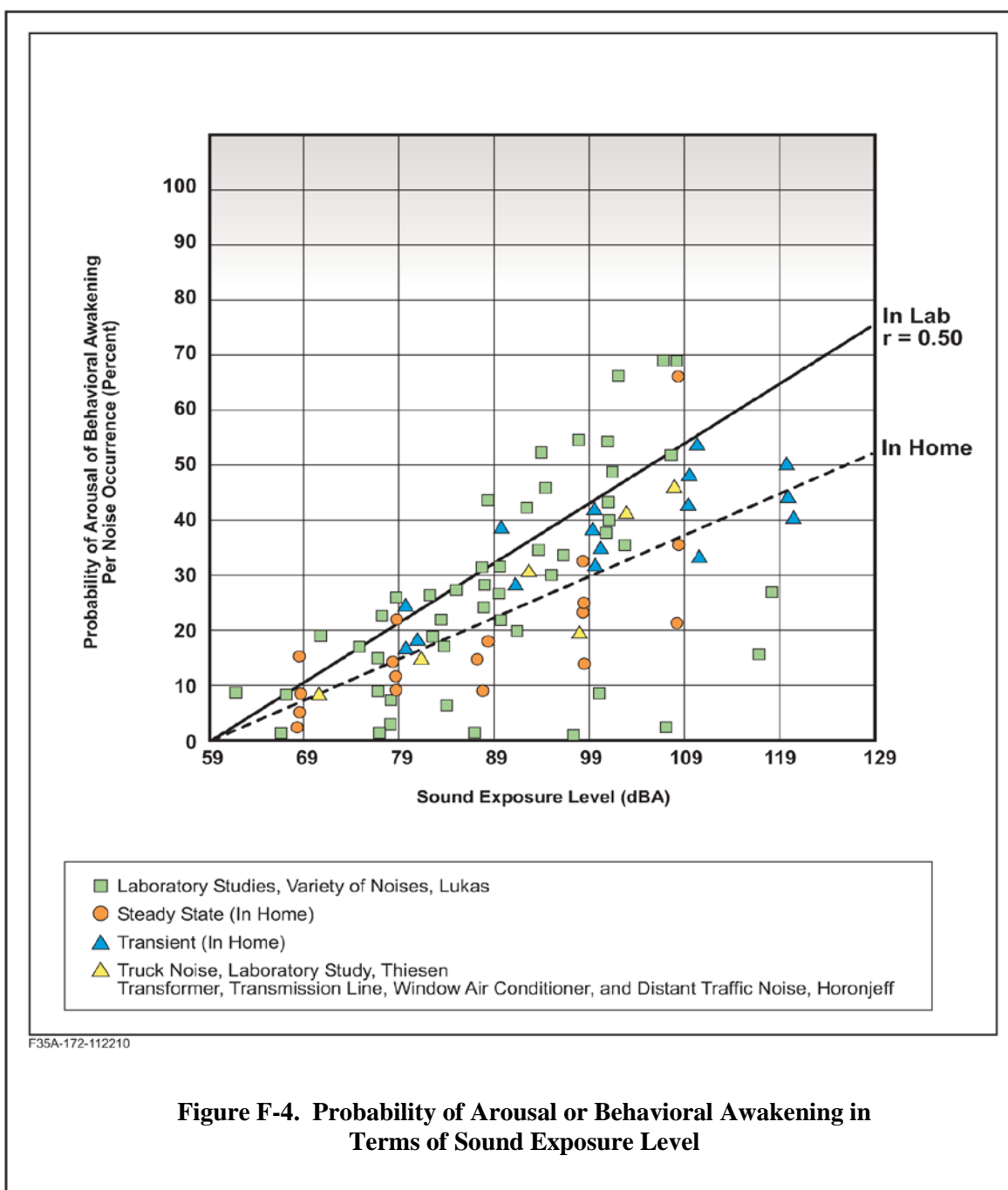
2.6 Noise Effects on Domestic Animals and Wildlife

Animal species differ greatly in their responses to noise. Each species has adapted, physically and behaviorally, to fill its ecological role in nature, and its hearing ability usually reflects that role. Animals rely on their hearing to avoid predators, obtain food, and communicate with and attract other members of their species. Aircraft noise may mask or interfere with these functions. Secondary effects may include nonauditory effects similar to those exhibited by humans: stress, hypertension, and other nervous disorders. Tertiary effects may include interference with mating and resultant population declines.

2.7 Noise Effects on Structures

Subsonic Aircraft Noise

Normally, the most sensitive components of a structure to airborne noise are the windows and, infrequently, the plastered walls and ceilings. An evaluation of the peak sound pressures impinging on the structure is normally sufficient to determine the possibility of damage. In general, at sound levels above 130 dB, there is the possibility of the excitation of structural component resonance. While certain frequencies (such as 30 Hz for window breakage) may be of more concern than other frequencies, conservatively, only sounds lasting more than one second above a sound level of 130 dB are potentially damaging to structural components (National Research Council/National Academy of Sciences 1977).



A study directed specifically at low-altitude, high-speed aircraft showed that there is little probability of structural damage from such operations (Sutherland 1989). One finding in that study is that sound levels at damaging frequencies (e.g., 30 Hz for window breakage or 15 to 25 Hz for whole-house response) are rarely above 130 dB.

Noise-induced structural vibration may also cause annoyance to dwelling occupants because of induced secondary vibrations, or “rattle,” of objects within the dwelling, such as hanging pictures, dishes, plaques,

and bric-a-brac. Window panes may also vibrate noticeably when exposed to high levels of airborne noise, causing homeowners to fear breakage. In general, such noise-induced vibrations occur at sound levels above those considered normally incompatible with residential land use. Thus assessments of noise exposure levels for compatible land use should also be protective of noise-induced secondary vibrations.

Sonic Booms

Sonic booms are commonly associated with structural damage. Most damage claims are for brittle objects, such as glass and plaster. Table F-5 summarizes the threshold of damage that might be expected at various overpressures. There is a large degree of variability in damage experience, and much damage depends on the pre-existing condition of a structure. Breakage data for glass, for example, spans a range of two to three orders of magnitude at a given overpressure. At 1 psf, the probability of a window breaking ranges from one in a billion (Sutherland 1990) to one in a million (Hershey and Higgins 1976). These damage rates are associated with a combination of boom load and glass condition. At 10 psf, the probability of breakage is between one in a hundred and one in a thousand. Laboratory tests of glass (White 1972) have shown that properly installed window glass will not break at overpressures below 10 psf, even when subjected to repeated booms, but in the real world glass is not in pristine condition.

Table F-5. Possible Damage to Structures From Sonic Booms		
<i>Sonic Boom Overpressure Nominal (psf)</i>	<i>Type of Damage</i>	<i>Item Affected</i>
0.5 - 2	Plaster	Fine cracks; extension of existing cracks; more in ceilings; over door frames; between some plaster boards.
	Glass	Rarely shattered; either partial or extension of existing.
	Roof	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
	Damage to outside walls	Existing cracks in stucco extended.
	Bric-a-brac	Those carefully balanced or on edges can fall; fine glass, such as large goblets, can fall and break.
	Other	Dust falls in chimneys.
2 - 4	Glass, plaster, roofs, ceilings	Failures show that would have been difficult to forecast in terms of their existing localized condition. Nominally in good condition.
4 - 10	Glass	Regular failures within a population of well-installed glass; industrial as well as domestic greenhouses.
	Plaster	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
	Roofs	High probability rate of failure in nominally good state, slurry-wash; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
	Walls (out)	Old, free standing, in fairly good condition can collapse.
	Walls (in)	Inside ("party") walls known to move at 10 psf.

Table F-5. Possible Damage to Structures From Sonic Booms		
Greater than 10	Glass	Some good glass will fail regularly to sonic booms from the same direction. Glass with existing faults could shatter and fly. Large window frames move.
	Plaster	Most plaster affected.
	Ceilings	Plaster boards displaced by nail popping.
	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gale-end and will-plate cracks; domestic chimneys dislodged if not in good condition.
	Walls	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.
	Bric-a-brac	Some nominally secure items can fall; e.g., large pictures, especially if fixed to party walls.

Source: Haber and Nakaki 1989

Damage to plaster occurs at similar ranges to glass damage. Plaster has a compounding issue in that it will often crack due to shrinkage while curing, or from stresses as a structure settles, even in the absence of outside loads. Sonic boom damage to plaster often occurs when internal stresses are high from these factors.

Some degree of damage to glass and plaster should thus be expected whenever there are sonic booms, but usually at the low rates noted above. In general, structural damage from sonic booms should be expected only for overpressures above 10 psf.

2.8 Noise Effects on Terrain

Subsonic Aircraft Noise

Members of the public often believe that noise from low-flying aircraft can cause avalanches or landslides by disturbing fragile soil or snow structures in mountainous areas. There are no known instances of such effects, and it is considered improbable that such effects will result from routine, subsonic aircraft operations.

Sonic Booms

In contrast to subsonic noise, sonic booms are considered to be a potential trigger for snow avalanches. Avalanches are highly dependent on the physical status of the snow, and do occur spontaneously. They can be triggered by minor disturbances, and there are documented accounts of sonic booms triggering avalanches. Switzerland routinely restricts supersonic flight during avalanche season.

Landslides are not an issue for sonic booms. There was one anecdotal report of a minor landslide from a sonic boom generated by the Space Shuttle during landing, but there is no credible mechanism or consistent pattern of reports.

2.9 Noise Effects on Historical and Archaeological Sites

Because of the potential for increased fragility of structural components of historical buildings and other historical sites, aircraft noise may affect such sites more severely than newer, modern structures. Again, there are few scientific studies of such effects to provide guidance for their assessment.

One study involved the measurements of sound levels and structural vibration levels in a superbly restored plantation house, originally built in 1795, and now situated approximately 1,500 feet from the centerline at the departure end of Runway 19L at Washington Dulles International Airport. These measurements were made in connection with the proposed scheduled operation of the supersonic Concorde airplane at Dulles (Wesler 1977). There was special concern for the building's windows, since roughly half of the 324 panes were original. No instances of structural damage were found. Interestingly, despite the high levels of noise during Concorde takeoffs, the induced structural vibration levels were actually less than those induced by touring groups and vacuum cleaning within the building itself.

As noted above for the noise effects of noise-induced vibrations on normal structures, assessments of noise exposure levels for normally compatible land uses should also be protective of historic and archaeological sites.

3.0 NOISE MODELING

3.1 Subsonic Aircraft Noise

An aircraft in subsonic flight generally emits noise from two sources: the engines and flow noise around the airframe. Noise generation mechanisms are complex and, in practical models, the noise sources must be based on measured data. The Air Force has developed a series of computer models and aircraft noise databases for this purpose. The models include NOISEMAP (Moulton 1992) for noise around airbases, and MR_NMAP (Lucas and Calamia 1996) for use in MOAs, ranges, and low-level training routes. These models use the NOISEFILE database developed by the Air Force. NOISEFILE data includes SEL and L_{Amax} as a function of speed and power setting for aircraft in straight flight.

Noise from an individual aircraft is a time-varying continuous sound. It is first audible as the aircraft approaches, increases to a maximum when the aircraft is near its closest point, then diminishes as it departs. The noise depends on the speed and power setting of the aircraft and its trajectory. The models noted above divide the trajectory into segments whose noise can be computed from the data in NOISEFILE. The contributions from these segments are summed.

MR_NMAP was used to compute noise levels in the airspace. The primary noise metric computed by MR_NMAP was L_{dnmr} averaged over each airspace. Supporting routines from NOISEMAP were used to calculate SEL and L_{Amax} for various flight altitudes and lateral offsets from a ground receiver position.

3.2 Sonic Booms

When an aircraft moves through the air, it pushes the air out of its way. At subsonic speeds, the displaced air forms a pressure wave that disperses rapidly. At supersonic speeds, the aircraft is moving too quickly for the wave to disperse, so it remains as a coherent wave. This wave is a sonic boom. When heard at the ground, a sonic boom consists of two shock waves (one associated with the forward part of the aircraft, the other with the rear part) of approximately equal strength and (for fighter aircraft) separated by 100 to 200 milliseconds. When plotted, this pair of shock waves and the expanding flow between them have the appearance of a capital letter “N,” so a sonic boom pressure wave is usually called an “N-wave.” An N-wave has a characteristic “bang-bang” sound that can be startling. Figure F-5 shows the generation and evolution of a sonic boom N-wave under the aircraft. Figure F-6 shows the sonic boom pattern for an aircraft in steady supersonic flight. The boom forms a cone that is said to sweep out a “carpet” under the flight track.

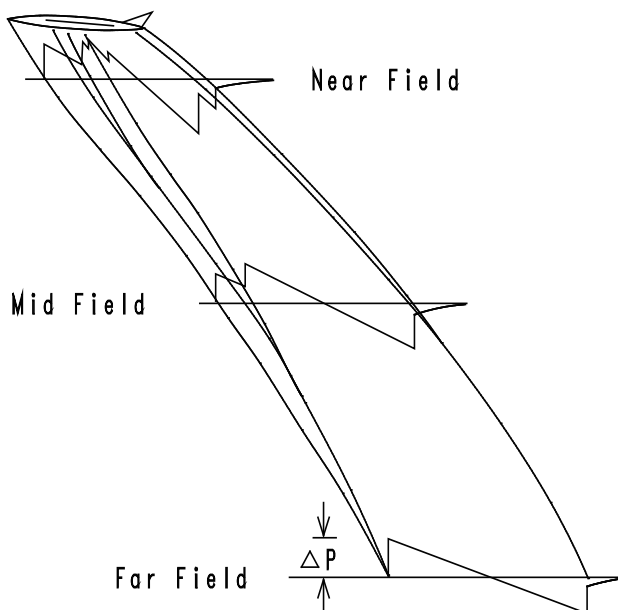


Figure F-5. Sonic Boom Generation and Evolution to N-Wave

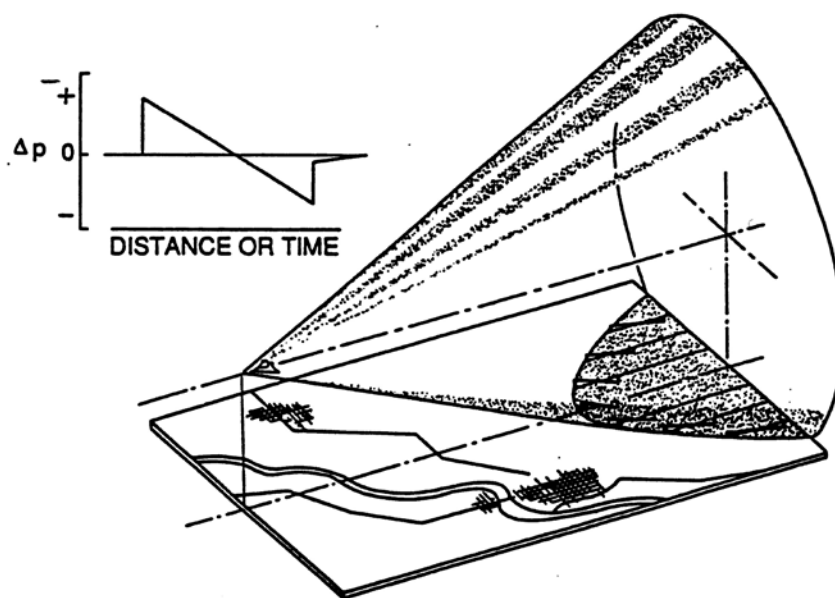


Figure F-6. Sonic Boom Carpet in Steady Flight

The complete ground pattern of a sonic boom depends on the size, shape, speed, and trajectory of the aircraft. Even for a nominally steady mission, the aircraft must accelerate to supersonic speed at the start, decelerate back to subsonic speed at the end, and usually change altitude. Figure F-7 illustrates the complexity of a nominal full mission.

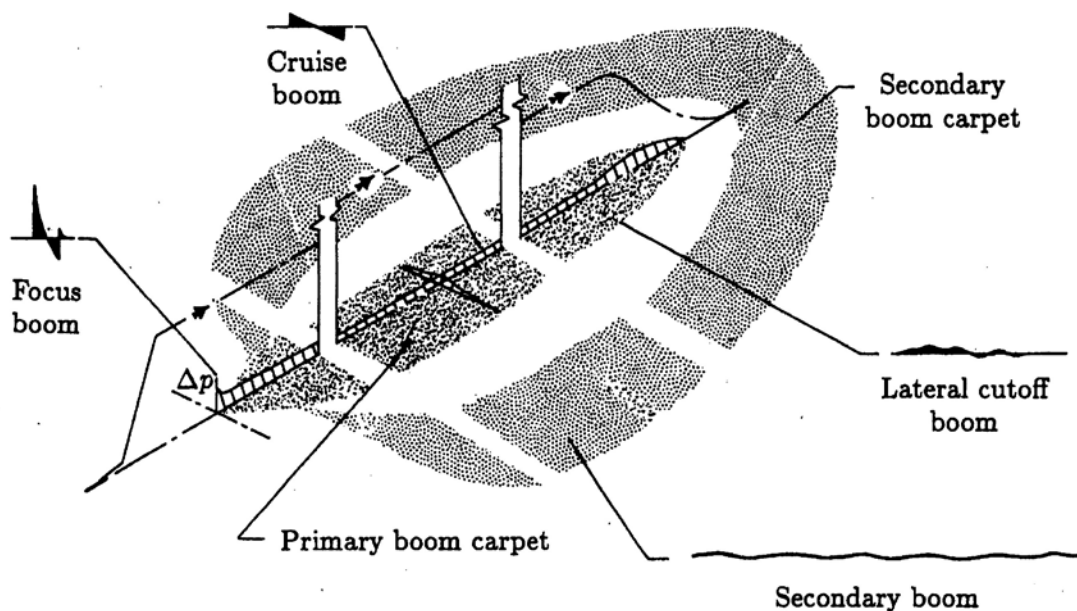


Figure F-7. Complex Sonic Boom Pattern for Full Mission

The Air Force's PCBoom4 computer program (Plotkin and Grandi 2002) can be used to compute the complete sonic boom footprint for a given single event, accounting for details of a particular maneuver.

Supersonic operations for the proposed action and alternatives are, however, associated with air combat training, which cannot be described in the deterministic manner that PCBoom4 requires. Supersonic events occur as aircraft approach an engagement, break at the end, and maneuver for advantage during the engagement. Long time cumulative sonic boom exposure, CDNL, is meaningful for this kind of environment.

Long-term sonic boom measurement projects have been conducted in four supersonic air combat training airspaces: White Sands, New Mexico (Plotkin *et al.* 1989); the eastern portion of the Goldwater Range, Arizona (Plotkin *et al.* 1992); the Elgin MOA at Nellis AFB, Nevada (Frampton *et al.* 1993); and the western portion of the Goldwater Range (Page *et al.* 1994). These studies included analysis of schedule and air combat maneuvering instrumentation data and supported development of the 1992 BOOMAP model (Plotkin *et al.* 1992). The current version of BOOMAP (Frampton *et al.* 1993; Plotkin 1996) incorporates results from all four studies. Because BOOMAP is directly based on long-term measurements, it implicitly accounts for such variables as maneuvers, statistical variations in operations, atmosphere effects, and other factors.

Figure F-8 shows a sample of supersonic flight tracks measured in the air combat training airspace at White Sands (Plotkin *et al.* 1989). The tracks fall into an elliptical pattern aligned with preferred engagement directions in the airspace. Figure F-9 shows the CDNL contours that were fit to six months of measured booms in that airspace. The subsequent measurement programs refined the fit, and demonstrated that the elliptical maneuver area is related to the size and shape of the airspace (Frampton *et al.* 1993). BOOMAP quantifies the size and shape of CDNL contours, and also numbers of booms per day, in air combat training airspaces. That model was used for prediction of cumulative sonic boom exposure in this analysis.



Figure F-8. Supersonic Flight Tracks in Supersonic Air Combat Training Airspace

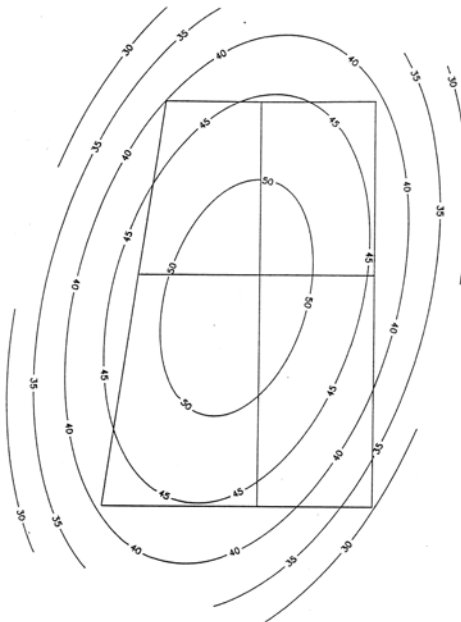


Figure F-9. Elliptical CDNL Contours in Supersonic Air Combat Training Airspace

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APPENDIX G

NOISE CALCULATIONS

APPENDIX G

NOISE CALCULATIONS

1.0 INTRODUCTION

1.1 Background

The U.S. Air Force is proposing an expansion of training airspace by creating a new MOA on the west side of the UTTR over White Pine and Elko Counties, Nevada. This expansion would involve a request for a waiver for supersonic flight operations within the existing Currie/Tippet ATCAA, which overlies the proposed MOA.

1.2 Purpose

This technical note documents the noise and sonic boom analysis based on the proposed operations expected to occur within the new White Elk MOA and existing Currie/Tippet ATCAA airspaces. This note includes a description of current and proposed flight operations in the airspace, the resulting On-set Rate Adjusted Day Night Average Sound Level (L_{dnmr}), the resulting C-weighted Day Night Average Sound Level (L_{Cdn}) contours from supersonic operations, and representative noise levels at a select number of specific locations in and around the proposed airspace.

1.3 Approach

Based on the operational description for the current and proposed airspace, noise and sonic boom analysis were conducted to describe the change in the acoustical environment in and around the White Elk MOA and Currie/Tippet ATCAA. These analyses involve long-term noise estimates along with supplemental descriptions of the potential aircraft noise and sonic boom levels. For the aircraft noise analysis, DoD's MR_NMAP noise model (Lucas & Calamia 1996) was used to calculate the expected aircraft noise levels for subsonic operations with the airspace. For the supersonic operational analysis, United States Air Force's BOOMAP model (Frampton, Lucas, & Cook 1993) was employed for calculating the long-term sonic boom exposure contours.

2.0 STUDY AREA

The two airspace elements would be located directly to the west of the UTTR and encompass the Currie/Tippet ATCAA with the proposed White Elk MOA located underneath the ATCAA. The ATCAA authorized altitudes range from 18,000 feet MSL to 58,000 feet MSL and the MOA would range from 14,000 feet MSL up to, but not including, 18,000 feet MSL. The land area covered by the MOA follows the same boundaries as the ATCAA with a reduction of the southwest corner, as shown in Figure G-1. The UTM coordinates of the airspace definitions are provided in Table G-1. The specific point locations are also shown in Figure G-1 and listed in Table G-2. For modeling purposes, a single ground height of 6,500 feet MSL is used.

Table G-1. Coordinate Definitions of White Elk MOA and Currie/Tippet ATCAA		
<i>Airspace</i>	<i>UTM Coordinates, Zone 11</i>	
<i>ATCAA</i>	<i>Northing, m</i>	<i>Easting, m</i>
1	4,497,500	715,704
2	4,496,561	681,917
3	4,475,138	661,228
4	4,397,010	662,704
5	4,361,609	687,749
6	4,362,383	719,474
1	4,497,500	715,704
<i>MOA</i>	<i>Northing, m</i>	<i>Easting, m</i>
1	4,497,500	715,704
2	4,496,561	681,917
3	4,475,138	661,228
4a	4,413,972	663,089
6	4,362,383	719,474
1	4,497,500	715,704

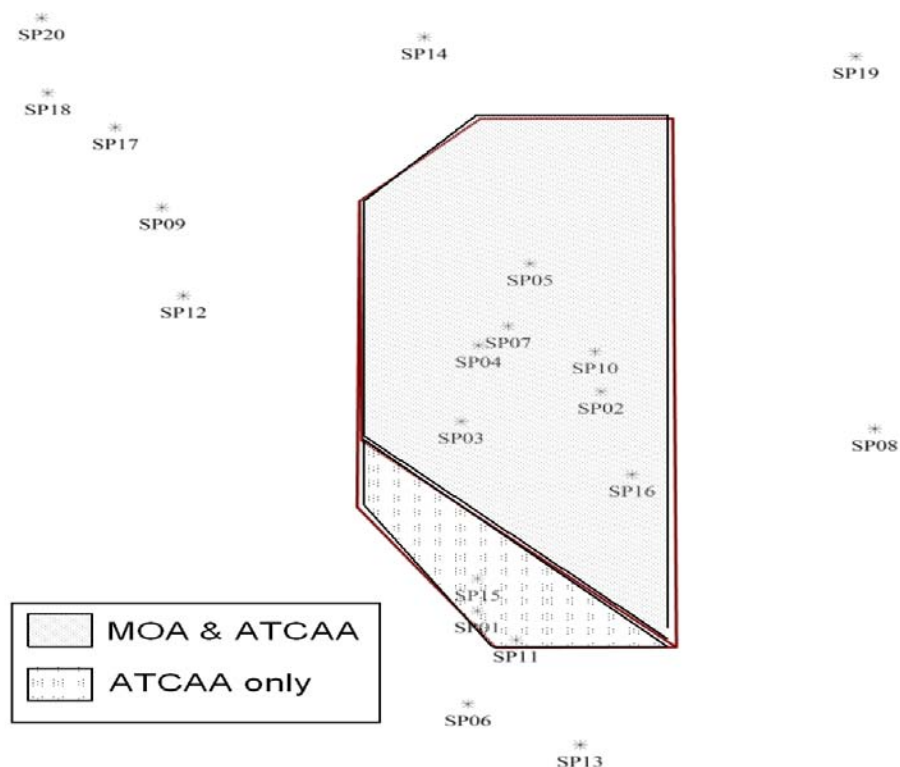


Figure G-1. White Elk MOA and Currie/Tippet ATCAA Outline with Specific Point Locations

<i>Noise Point</i>	<i>Name</i>	<i>UTM Northing (Zone 11)</i>	<i>UTM Easting (Zone 11)</i>
SP01	Bassett Lake	4,370,927	684,316
SP02	Becky Peak	4,427,382	704,712
SP03	Cherry Creek	4,419,233	680,368
SP04	Goshute Canyon Wilderness	4,438,732	682,978
SP05	Currie	4,459,836	691,532
SP06	Ely	4,347,035	683,157
SP07	Goshute Canyon Wilderness Study Area	4,443,750	688,050
SP08	Goshute Indian Reservation	4,418,911	752,895
SP09	Humboldt National Forest	4,472,726	626,732
SP10	Lages Station	4,437,565	703,429
SP11	McGill	4,363,644	691,248
SP12	Ruby Lake National Wildlife Refuge	4,450,247	630,968
SP13	Schell Creek Range	4,337,030	703,073
SP14	Snow Water Lake	4,517,271	671,672
SP15	Steptoe	4,379,141	684,150
SP16	Stone House	4,406,322	710,615
SP17	South Fork Indian Reservation	4,493,003	618,041
SP18	South Fork State Recreation Area	4,501,482	605,967
SP19	West Wendover	4,513,972	747,419
SP20	Elko	4,520,666	604,439

3.0 OPERATIONAL PARAMETERS

The analysis is separated into two areas: subsonic and supersonic operations. Both of these assessments utilize the same annual operational counts. For subsonic noise, the following items are required:

- Airspace Volume – spatial volume of the airspace (Section 2)
- Area Flight Profiles – area, altitude, and time distributions
- Tracked Flight Profiles – track, altitude, and circuit distributions
- Distribution of Operations – spreads operation counts among flight profiles.

For sonic boom, the following items are required:

- Airspace Land Area – spatial land coverage (Section 2)
- Flight Profiles – type of aircraft and supersonic operation
- Distribution of operations – spreads operation counts among flight profiles.

3.1 Sortie-Operations

The annual baseline sortie-operations (fiscal year 2007) and proposed sortie-operations are substantially different based on the increased utilization of the expanded airspace. For baseline operations, the total number of operations occurring within the Currie/Tippet ATCAA was 548 area operations and 136 tracked (aerial refueling) operations. The summary of these operations is provided in Table G-3, which provides the breakdown of area and tracked operations. Area sortie-operations represent flights that occur within a given volume of airspace with no defined pattern. Tracked operations involve flights in the volume of airspace that have a well defined pattern such as the race track pattern used for aerial refueling.

In Table G-3, the area sortie-operations are further grouped by aerial refueling utilization. This grouping accounts for the additional flying time within the airspace because of the utilization of aerial refueling. Also, the day/night split is 95 percent day operations and 5 percent night operations, where “day” is defined as operations occurring between 0700 and 2200 hours, and where “night” is for operations occurring after 2200 and before 0700 hours. For current baseline conditions, the only training mission for the 388 FW F-16 involves Tactical Intercept training.

Table G-3. Baseline Annual Flight Operations				
<i>Annual Area Operations</i>				
<i>Aircraft</i> (F-16, F-15, F-22, and Other ¹)	<i>Refueling</i>	<i>Total</i>	<i>Day</i>	<i>Night</i>
Tactical Intercept (TI)	N	548	443	23
	Y		76	4
Close Air Support (CAS)	N	0	0	0
	Y		0	0
Defensive/Offensive Counter Air Attack (DCA/OCA)	N	0	0	0
	Y		0	0
Surface Attack Tactics (SAT)	N	0	0	0
	Y		2	0
Totals		548	521	27
<i>Annual Tracked Operations</i>				
<i>Aircraft</i>	<i>Total</i>	<i>Day</i>	<i>Night</i>	
B-1	0	0	0	
B-2	0	0	0	
B-52	0	0	0	
F-15	0	0	0	
F-16	82	78	4	
F-22	0	0	0	
KC-10	16	15	1	
KC-135	36	34	2	
Other	2	2	0	
Total	136	129	7	

¹Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s

The proposed annual sortie-operations are composed of 9,590 area operations and 2,293 tracked operations. The summary of these operations is provided in Table G-4. The proposed operations involved additional training profiles: CAS, DCA/OCA, and SAT. These new training profiles would take advantage of the expanded airspace afforded by the creation of the MOA.

Table G-4. Proposed Annual Flight Operations				
Annual Area Operations				
<i>F-16 Sorties</i>	<i>Refueling</i>	<i>Total</i>	<i>Day</i>	<i>Night</i>
Tactical Intercept	N	1,840	1486	78
	Y		262	14
CAS	N	1,840	1486	78
	Y		262	14
DCA/OCA	N	1,840	1486	78
	Y		262	14
SAT	N	3,680	2972	156
	Y		524	28
<i>Subtotal</i>		9,200	8,740	460
Additional Aircraft				
F-15	N	40	36	2
	Y		2	0
F-22	N	60	56	3
	Y		1	0
A-10	N	90	86	4
Other ¹	N	200	182	10
	Y		8	0
<i>Subtotal</i>		390	371	19
Totals		9,590	9,111	479
Annual Tracked Operations				
<i>Aircraft</i>	<i>Total</i>	<i>Day</i>	<i>Night</i>	
B-1	10	10	0	
B-2	10	10	0	
B-52	15	15	0	
F-15	2	2	0	
F-16	1,380	1,311	69	
F-22	1	1	0	
KC-10	16	247	13	
KC-135	607	577	30	
Other ¹	8	8	0	
Total	2,293	2,181	112	

¹Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s

3.2 Subsonic Operational Parameters

3.2.1 Area Flight Profiles

For the baseline case, sortie-operations only occur in the Currie/Tippet ATCAA airspace and are limited to basic air-to-air Tactical Intercept training. For the 388 FW F-16 operations, the following operating conditions are used for calculating the noise:

Engine power at 104 percent NC (MIL power for GE-100 engine utilized by 388 FW)

Airspeed at 340 knots

Altitude distribution as shown in Table G-5

For the F-22 operations, the following conditions are used for calculating the noise:

Engine power at 100 percent ETR (MIL power)

Airspeed at 300 knots

Altitude distribution as shown in Table G-5

For “Other” aircraft operations, an F-15 was modeled with the following operating conditions:

Engine power at 90 percent NC (MIL power)

Airspeed at 300 knots

Altitude distribution as shown in Table G-5

Table G-5. Altitude Distribution for Baseline Profiles					
	<i>ATCAA Altitude Distribution Bands (feet MSL)</i>				
<i>Profile</i>	<i>18 to 24k</i>	<i>24 to 29k</i>	<i>29 to 34k</i>	<i>34 to 39k</i>	<i>39 to 45k</i>
F-16 TI	41.2%	41.2%	7.6%	7.6%	2.4%
F-22	14%	30%	28%	20%	8%
F-15	33%	37%	17%	11%	2%
Other	49%	34%	7.5%	7.5%	2%

For these operations the following time in airspace were modeled for the area operations:

Profile	Without Refueling	With Refueling
F-16 TI	25 minutes	55 minutes
F-22	25 minutes	55 minutes
F-15	25 minutes	55 minutes
Other	25 minutes	55 minutes

For the proposed action, the sortie-operations would be expanded into the MOA airspace which provides lower operating altitudes. The same operating conditions are modeled for the F-16, F-22, F-15 and A-10, and Other. For the specified F-15 operations, the operating conditions are the same as used for the “other” operations. For the A-10, the following operating conditions are used for calculating the noise:

Engine power at 6700 NF (Max Rated Thrust)

Airspeed at 350 knots

Altitude distribution as shown in Table G-6

With the expansion of the airspace volume, the altitude distributions are modified from the baseline case as shown in Table G-6.

Table G-6. Altitude Distribution for Proposed Profiles									
Flight Profile	White Elk MOA				ATCAA				
<i>F-16 Sorties</i>	<i>14-15k</i>	<i>15-16k</i>	<i>16-17k</i>	<i>17-18k</i>	<i>18-24k</i>	<i>24-29k</i>	<i>29-34k</i>	<i>34-39k</i>	<i>39-45k</i>
Tactical Intercept	3.75%	3.75%	3.75%	3.75%	35%	35%	6.5%	6.5%	2%
CAS	7.50%	7.50%	7.50%	7.50%	70%	0%	0%	0%	0%
DCA/OCA	3.75%	3.75%	3.75%	3.75%	35%	35%	6.5%	6.5%	2%
SAT	3.75%	3.75%	3.75%	3.75%	35%	35%	6.5%	6.5%	2%
Other Aircraft									
F-15	3.75%	3.75%	3.75%	3.75%	30%	34%	12.8%	6.8%	2%
F-22	1.25%	1.25%	1.25%	1.25%	13%	29%	26.6%	19%	8%
A-10	34%	33%	33%	0%	0%	0%	0%	0%	0%
Other ¹	3.75%	3.75%	3.75%	3.75%	42%	29%	6%	6%	2%

¹Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s

For the proposed operations, the following flying time in the airspace were modeled:

Profile	Without Refueling	With Refueling
F-16 TI	25 minutes	55 minutes
F-16 CAS	30 minutes	60 minutes
F-16 DCA/OCA	20 minutes	50 minutes
F-16 SAT	20 minutes	50 minutes
F-15	25 minutes	55 minutes
F-22	25 minutes	55 minutes
A-10	25 minutes	NA
Other	25 minutes	55 minutes

3.2.2 Tracked Operations

The tracked operations (aerial refueling) are solely refueling aerial operations that occur between 19 kft to 25 kft MSL. The altitude distribution is the following:

19k to 21k feet MSL	20 percent
21k to 23k feet MSL	60 percent
23k to 25k feet MSL	20 percent

The airspeed is modeled at 310 knots at the following engine power conditions for each aircraft:

A-10	6200 NF
B-1	89.9 percent RPM
B-2	70 PLA
B-52	83.5 percent RPM
F-15	73.5 percent NC
F-16	97.0 percent NC
F-22	30 percent ETR
KC-10	100 percent N1
KC-135	80.3 percent NF

3.3 Supersonic Flight Operational Parameters

For supersonic operations, the expansive airspace contained in the Currie/Tippet ATCAA would allow significant use of supersonic airspeeds in the 388 FW training operations. The 388 FW provided their estimated supersonic operating parameters which are summarized in Table G-7. In this table, the 388 FW estimates that the rate of sorties utilizing supersonic flight will be 20 percent for Tactical Intercept, DCA/OCA, and SAT training. For Tactical Intercept and DCA/OCA, multiple supersonic segments are expected to occur during a training session. The 388 FW estimates that three separate supersonic segments will be conducted during a normal training period. Use of the segments would involve the following basic script:

- supersonic inbound to engagement,
- subsonic engagement,
- supersonic disengagement,
- regroup,
- supersonic inbound to engagement,
- subsonic engagement, and
- subsonic disengagement.

The supersonic segments are estimated to last one to two minutes. This script would be repeated for periods that involve aerial refueling. For SAT, only one supersonic segment would be conducted. Table G-7 lists the estimated boom per sortie rate based on the mission description.

The estimated supersonic rate of 9 percent per sortie for F-15 operations is based on a sonic boom monitoring study at Elgin MOA in the Nellis Range Complex (Frampton, Lucas & Cook 1993). For the F-22 operations, the estimated supersonic rate of 30 percent is based on the analysis used in the Initial F-22 Operational Wing Beddown EIS, (United States Air Force 2001). Using these estimated supersonic

utilization rates, Table G-7 provides the estimated number of monthly supersonic sorties based on the annual operational counts in Table G-4.

Table G-7. Estimated Supersonic Operations for Currie/Tippet ATCAA								
Operation	Refuel	Annual	Monthly		% Supersonic Operations	Supersonic Sorties		Booms per Sortie
F-16 Sorties		Total	Day	Night		Day	Night	
Tactical Intercept	N	1,840	123.8	6.5	20%	24.8	1.3	3
	Y		21.9	1.2	20%	4.4	0.2	6
CAS	N	1,840	123.8	6.5	0%	0.0	0.0	0
	Y		21.9	1.2	0%	0.0	0.0	0
DCA/OCA	N	1,840	123.8	6.5	20%	24.8	1.3	3
	Y		21.9	1.2	20%	4.4	0.2	6
SAT	N	3,680	247.6	13.0	20%	49.5	2.6	1
	Y		43.7	2.3	20%	8.7	0.5	2
Additional Aircraft								
F-15	N	40	3.0	0.2	9%	0.3	0.0	1
	Y		0.1	0.0	9%	0.0	0.0	2
F-22	N	60	4.7	0.3	30%	1.4	0.1	4
	Y		0.1	0.0	30%	0.0	0.0	8
Other ¹	N	200	7.1	0.4	20%	1.4	0.1	1
	Y		15.2	0.8	20%	3.0	0.2	2
Total						122.7	6.5	

¹Other aircraft include F-18 and transient F-16 that are assumed to fly the same profiles as the Hill AFB-based F-16s
Note: A-10 aircraft do not fly supersonic; therefore, they are not represented in this table

For the F-16 supersonic events, the maximum Mach number is expected to range from 1.3 to 1.6. This range is higher than the Mach number range observed in the Elgin MOA study, which observed maximum Mach numbers around 1.1 (Frampton, Lucas & Cook 1993). To account for this increased Mach number range, all of the supersonic events are assumed to generate a sonic boom on the ground.

4.0 ACOUSTICAL ENVIRONMENT

The acoustic environment is generally defined as the sounds that occur within an area. These sounds include both nature and man-made. For this analysis, the concern is focused on the sound levels from military aircraft. From the ground, the sound level of an aircraft changes continuously, arising above the ambient sounds as the aircraft approaches the receiver, increasing to a maximum level as the aircraft passes closest to the receiver, and then decreasing back below the ambient as the aircraft flies into the distance. For this analysis, the following noise metrics are used to describe the aircraft noise and sonic boom levels: the Sound Exposure Level (SEL), Onset-Rate Adjusted L_{dnmr} , and CDNL. A-weighted levels are used for subsonic aircraft noise, and C-weighted levels are used for sonic booms and other impulsive noises. The letter “C” is included in the symbol to denote when C-weighting is used.

- SEL accounts for both the maximum sound level and the length of time a transient sound lasts. SEL does not directly represent the sound level heard at any given time. Rather, it provides a measure of the total sound exposure for an entire transient event. SEL provides a better measure of the event's intrusion than just the maximum level.
- L_{dnmr} is a modification to the DNL metric, which combines the levels and durations of noise events and the number of events over an extended time period. L_{dnmr} accounts for the "surprise" effect that can occur when a military jet flies fast and low to the ground and its noise can rise quickly above the ambient. L_{dnmr} contains a penalty of up to 11 dB to account for this rapid onset effect. In addition to this effect, L_{dnmr} is a cumulative average computed over a set of 24-hour periods to represent total noise exposure. L_{dnmr} accounts for more intrusive night time noise by adding a 10 dB penalty for sounds occurring after 10:00 p.m. and before 7:00 a.m. Moreover, L_{dnmr} can be computed for the busiest month of the year to account for sporadic use of the airspace. For this analysis operational numbers were only available on an annual basis, so no adjustment was made for a busiest month in the analysis.
- CDNL is a day-night average sound level computed for areas subject to sonic booms. These areas are also subjected to subsonic noise assessed according to L_{dnmr} . CDNL is a cumulative average computed over a set of 24-hour periods to represent total noise exposure from sonic boom and other impulsive events. CDNL also accounts for more intrusive night time noise, adding a 10 dB penalty for sounds after 10:00 p.m. and before 7:00 a.m.

In this analysis, sound levels are presented for noise generated by military aircraft associated with the current and proposed airspace utilizations. These are not the only sound sources occurring in the area. Aircraft noise must be compared with existing noise as well as evaluated on an absolute basis. The sound levels in the affected area have not been measured, but representative levels are expected to range from 20 to 45 dB for lightly populated areas (Harris 1998).

4.1 Subsonic

L_{dnmr} is used for the evaluation of community noise effects (i.e., long-term annoyance), and particularly aircraft noise effects (US EPA 1974, FICUN 1980, FICAN 1992). In general, scientific studies and social surveys have found a high correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (Schultz 1974, Fidell *et al.* 1991, and Finegold *et al.* 1994).

Using the modeling parameters described in Section 2 and 3, the noise from subsonic operations were calculated with MR_NMAP (Lucas & Calamia 1996). For the baseline and proposed conditions, the calculated noise levels are below 45 dB L_{dnmr} underneath and around the airspace. Moreover, the areas

themselves have low population densities. These low numbers limit precise assessment of community annoyance because the received noise is infrequent. As such, the assessment of community annoyance is limited. A lower limit of 45 dB L_{dnmr} is used for subsonic noise, since this limit corresponds to 1 percent of the population being highly annoyed (Finegold, et al, 1993). In terms of single events, less than one event per day above 65 dB SEL occurs on average for current conditions. For the proposed operations, 6.8 events above 65 dB SEL per day are estimated. Thus, military aircraft noise events will be heard more often within the area for the proposed scenario. However, the expected community annoyance from subsonic noise will still be less than 1% highly annoyed since the calculated noise levels are less than 45 dB L_{dnmr} .

4.2 Supersonic

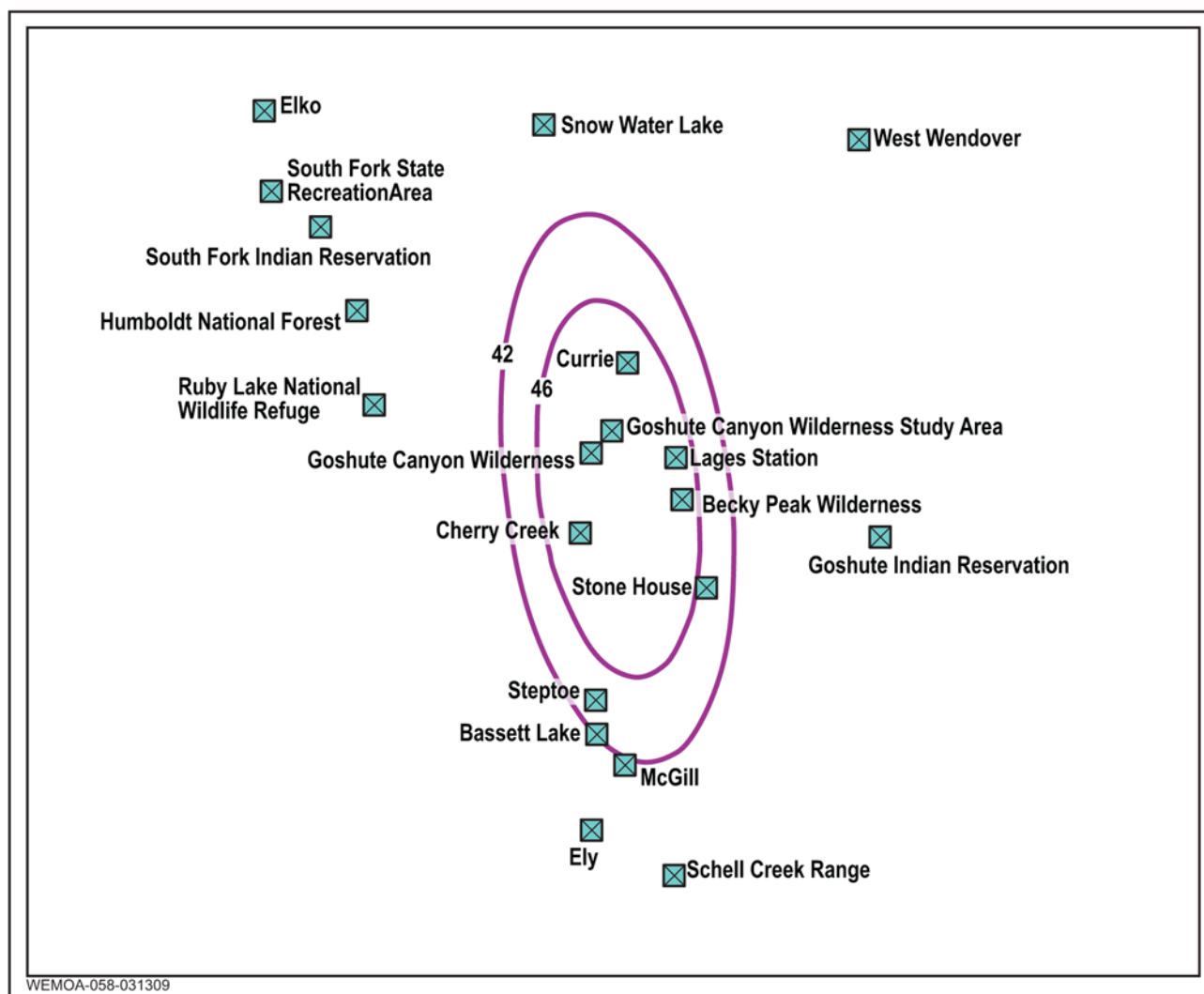
For sonic boom impact, current conditions in the area of sonic boom exposures are sporadic and rare. These sonic booms are generated within the adjoining UTTR airspace complex where supersonic operations are allowed. Thus, the baseline condition does not involve measurable sonic boom exposures. The proposed action will generate many sonic booms in the area. Using the estimated operational scenario for supersonic operations described in Section 3.3, the estimated sonic boom exposures can be calculated. The first step is to determine the number of supersonic segments expected to occur. Table G-8 provides a breakdown of the monthly rate of 296 sonic booms. Seventy-five percent of these booms will be generated above 30,000 feet MSL based on the altitude distributions in Table G-6.

Table G-8. Estimated Monthly Sonic Booms from Proposed Supersonic Operations in Currie/Tippet ATCAA											
<i>Operation</i>	<i>Refuel</i>	<i>Monthly</i>		<i>%</i>	<i>Sorties</i>		<i>Booms</i>	<i>Monthly Booms</i>			
<i>F-16 Sorties</i>		<i>Day</i>	<i>Night</i>	<i>Supersonic Operations</i>	<i>Day</i>	<i>Night</i>	<i>per Sortie</i>	<i>Day</i>	<i>Night</i>	<i>Events >30k</i>	<i>Events <30k</i>
Tactical Intercept	N	123.8	6.5	20%	24.8	1.3	3	74.3	3.9	52.1	26.1
	Y	21.9	1.2	20%	4.4	0.2	6	26.2	1.4	18.4	9.2
CAS	N	123.8	6.5	0%	0.0	0.0	0	0.0	0.0	0.0	0.0
	Y	21.9	1.2	0%	0.0	0.0	0	0.0	0.0	0.0	0.0
DCA/OCA	N	123.8	6.5	20%	24.8	1.3	3	74.3	3.9	52.1	26.1
	Y	21.9	1.2	20%	4.4	0.2	6	26.2	1.4	18.4	9.2
SAT	N	247.6	13.0	20%	49.5	2.6	1	49.5	2.6	52.1	0.0
	Y	43.7	2.3	20%	8.7	0.5	2	17.5	0.9	18.4	0.0
Additional Aircraft											
F-15	N	3.0	0.2	9%	0.3	0.0	1	0.3	0.0	0.3	0.0
	Y	0.1	0.0	9%	0.0	0.0	2	0.0	0.0	0.0	0.0
F-22	N	4.7	0.3	30%	1.4	0.1	4	5.6	0.3	5.9	0.0
	Y	0.1	0.0	30%	0.0	0.0	8	0.2	0.0	0.2	0.0
Other	N	7.1	0.4	20%	1.4	0.1	1	1.4	0.1	0.8	0.8
	Y	15.2	0.8	20%	3.0	0.2	2	6.1	0.3	3.2	3.2
Total					122.7	6.5	0	281.6	14.8	221.9	74.5

Note: A-10 aircraft do not fly supersonic; therefore, they are not represented in this table

BOOMAP is used to calculate the long-term sonic boom levels. The current version of BOOMAP (Frampton et al. 1993) is based on actual sonic boom measurement studies (Plotkin *et al.* 1992). These studies included measurement and analysis of sonic booms generated by air combat maneuvering training similar to the proposed operations. BOOMAP implicitly accounts for such variables as maneuvers, statistical variations in operations, atmosphere effects, and other factors. The altitude spread observed in the field measurements ranged from 10,000 feet MSL to over 40,000 feet MSL with 64 percent of the operations occurring below 30,000 feet MSL. With the proposed operations having a distribution skewed to higher altitudes (75 percent above 30,000 feet MSL), BOOMAP will provide a conservative estimate of CDNL. The resulting CDNL contour is elliptically shaped with a best fit to the airspace, and the maximum level occurs at the center of the airspace.

Using the monthly boom rate of 296, the resulting BOOMAP contour is shown in Figure G-2. The CDNL contours values are 42 and 46 dBC. These levels correspond to 0.83 percent and 1.66 percent highly annoyed, respectively (CHABA 1981). A maximum CDNL of 49 dBC is at the center of the ATCAA airspace. At center, BOOMAP estimates 0.4 booms per day to occur on average (one sonic boom about once every two flying days). However, for an average day, approximately 10 booms would occur in the airspace. Table G-9 provides the estimated CDNL values at each of the specific points with a lower limit of 42 which corresponds to less than 1 percent highly annoyed.



**Figure G-2. Estimated Sonic Boom Exposure Levels (CDNL)
for Proposed Supersonic Operations in Currie/Tippet ATCAA**

Table G-9. Estimated Sonic Boom Exposure Levels (CDNL) at Representative Locations for Proposed Supersonic Operations in Currie/Tippet ATCAA

<i>Noise Point</i>	<i>Name</i>	<i>UTM Northing (Zone 11)</i>	<i>UTM Easting (Zone 11)</i>	<i>CDNL (dBC)</i>	
				<i>Baseline</i>	<i>Proposed</i>
SP01	Bassett Lake	4,370,927	684,316	0	42
SP02	Becky Peak	4,427,382	704,712	0	47
SP03	Cherry Creek	4,419,233	680,368	0	49
SP04	Goshute Canyon Wilderness	4,438,732	682,978	0	49
SP05	Currie	4,459,836	691,532	0	48
SP06	Ely	4,347,035	683,157	0	<42
SP07	Goshute Canyon Wilderness Study Area	4,443,750	688,050	0	49
SP08	Goshute Indian Reservation	4,418,911	752,895	0	<42
SP09	Humboldt National Forest	4,472,726	626,732	0	<42
SP10	Lages Station	4,437,565	703,429	0	47
SP11	McGill	4,363,644	691,248	0	42
SP12	Ruby Lake National Wildlife Refuge	4,450,247	630,968	0	<42
SP13	Schell Creek Range	4,337,030	703,073	0	0
SP14	Snow Water Lake	4,517,271	671,672	0	<42
SP15	Steptoe	4,379,141	684,150	0	44
SP16	Stone House	4,406,322	710,615	0	45
SP17	South Fork Indian Reservation	4,493,003	618,041	0	<42
SP18	South Fork State Recreation Area	4,501,482	605,967	0	0
SP19	West Wendover	4,513,972	747,419	0	0
SP20	Elko	4,520,666	604,439	0	0

5.0 REFERENCES

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APPENDIX H
STATE AND FEDERAL LISTED SPECIES

APPENDIX H

STATE AND FEDERAL LISTED SPECIES

The following provides a list of all state and federally listed plant and animal species found in Nevada. The list includes the scientific and common names and the state and federal status of each species. None of these species are known to occur in the project area.

Species	Status		Likely to Occur Under the Proposed Airspace
<i>Scientific and Common Name</i>	<i>Federal</i>	<i>State</i>	
Plants			
<i>Astragalus phoenix</i> Ash Meadows milkvetch	LT, BLM	CE	N
<i>Centaureum namophilum</i> spring-loving centaury	LT, BLM	CE	N
<i>Enceliopsis nudicaulis</i> var. <i>corrugata</i> Ash Meadows sunray	LT, BLM	CE	N
<i>Grindelia fraxinoprattensis</i> Ash Meadows gumplant	LT, BLM	CE	N
<i>Ivesia kingii</i> var. <i>eremica</i> Ash Meadows ivesia	LT, BLM	CE	N
<i>Mentzelia leucophylla</i> Ash Meadows blazingstar	LT, BLM	CE	N
<i>Spiranthes diluvialis</i> Ute lady's tresses	LT, BLM	CE	N
<i>Eriogonum ovalifolium</i> var. <i>williamsiae</i> Steamboat buckwheat	LE, BLM	CE	N
<i>Nitrophila mohavensis</i> Amargosa niterwort	LE, BLM	CE	N
Invertebrates			
<i>Ambrysus amargosus</i> Ash Meadows naucorid	LT, BLM		N
Fish			
<i>Catostomus warnerensis</i> Warner sucker	LT, BLM		N
<i>Crenichthys nevadae</i> Railroad Valley springfish	LT, BLM	P	N
<i>Eremichthys acros</i> desert dace	LT, BLM	P	N
<i>Lepidomeda mollispinis pratensis</i> Big Spring spinedace	LT, BLM	P	N
<i>Oncorhynchus clarki henshawi</i> Lahontan cutthroat trout	LT, BLM	P	N
<i>Salvelinus confluentus</i> bull trout	LT, BLM	P	N
<i>Chasmistes cujus</i> cui-ui	LE, BLM	P	N

Species	Status		Likely to Occur Under the Proposed Airspace
<i>Scientific and Common Name</i>	<i>Federal</i>	<i>State</i>	
Plants			
<i>Crenichthys baileyi baileyi</i> White River springfish	LE, BLM	P	N
<i>Crenichthys baileyi grandis</i> Hiko White River springfish	LE, BLM	P	N
<i>Cyprinodon diabolis</i> Devils Hole pupfish	LE, BLM	P	N
<i>Cyprinodon nevadensis mionectes</i> Ash Meadows Amargosa pupfish	LE, BLM	P	N
<i>Cyprinodon nevadensis pectoralis</i> Warm Springs Amargosa pupfish	LE, BLM	P	N
<i>Empetrichthys latos latos</i> Pahrump poolfish	BLM	P	N
<i>Gila elegans</i> bonytail chub	LE, BLM	P	N
<i>Gila robusta jordani</i> Pahrana gat roundtail chub	LE, BLM	P	N
<i>Gila seminuda</i> Virgin River chub	LE, BLM	P	N
<i>Lepidomeda albivallis</i> White River spinedace	LE, BLM	P	N
<i>Moapa coriacea</i> Moapa dace	LE, BLM	P	N
<i>Plagopterus argentissimus</i> woundfin	LE, BLM		N
<i>Rhinichthys osculus lethoporus</i> Independence Valley speckled dace	LE, BLM	P	N
<i>Rhinichthys osculus nevadensis</i> Ash Meadows speckled dace	LE, BLM	P	N
<i>Rhinichthys osculus oligoporus</i> Clover Valley speckled dace	LE, BLM	P	N
<i>Xyrauchen texanus</i> razorback sucker	LE, BLM	P	N
Reptiles			
<i>Gopherus agassizii</i> desert tortoise	LT, BLM	P	N
Birds			
<i>Empidonax traillii extimus</i> Southwestern Willow Flycatcher	LE, BLM	P	N
<i>Rallus longirostris yumanensis</i> Yuma Clapper Rail	LE	P	N

Notes: LE = Listed Endangered
 LT = Listed Threatened
 BLM = Nevada BLM Special Status Species
 CE = Critically Endangered
 P = Nevada State Protected Species – protected under NRS 501
 Source: Nevada Natural Heritage Program (<http://heritage.nv.gov/lists/track.pdf>)

APPENDIX I
COOPERATING AGENCY CORRESPONDENCE



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC



OFFICE OF THE ASSISTANT SECRETARY

SEP 28 2007

SAF/IEE
1665 Air Force Pentagon
Washington DC 20330-1665

Ms. Nancy B. Kalinowski
Director, System Operations
Federal Aviation Administration
Airspace & Aeronautical Information Management
800 Independence Avenue, S.W.
Washington DC 20591

Dear Ms. Kalinowski

In accordance with the President's Council on Environmental Quality National Environmental Policy Act Regulations 40 CFR § 1501.6, *Cooperating Agencies*, the Air Force requests the participation of the Federal Aviation Administration (FAA) as a cooperating agency in the preparation of two unrelated Air Force Environmental Impact Statements (EIS) for:

a. Extension and modifications to the White Elk Military Operating Area in Nevada. This airspace initiative would support Ready Aircrew Program training of the 388 Fighter Wing, Hill AFB, Utah, during times when the Utah Test and Training Range is being used for higher priority testing.

b. Modification of the Powder River Training Complex in Montana, Wyoming, North Dakota and South Dakota. This airspace initiative would support the 28th Bomb Wing, Ellsworth AFB, South Dakota, among others, by providing realistic combat training that maximizes valuable aircrew flying hours while saving millions of dollars annually.

As a cooperating agency, the Air Force requests the FAA participate in various portions of the EIS development as may be required. Specifically, the Air Force asks the FAA to support as a cooperating agency by:

- Participating in the scoping process
- Assuming responsibility, upon request by the Air Force, for developing information and preparing analyses on issues for which the FAA has special expertise; and
- Making staff support available to enhance interdisciplinary review capability.

Please respond in writing to this request. Should you or your staff have any questions regarding this memo, our Headquarters Air Combat Command points of contact are Ms Sheryl K. Parker, A7PP, (757) 764-9334 for the White Elk, and Ms Linda DeVine, A7PP, (757)-764-9434 for the Powder River.

Sincerely

KEVIN W. BILLINGS
Deputy Assistant Secretary
(Environment, Safety and Occupational Health)



U.S. Department
of Transportation
**Federal Aviation
Administration**

RECEIVED OCT 15 2007

System Operations Airspace and
Aeronautical Information Management
800 Independence Ave., SW.
Washington, DC 20591

OCT 10 2007

Kevin W. Billings
Deputy Assistant Secretary
(Environment, Safety and Occupational Health)
SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

Dear Mr. Billings:

Thank you for your letter of September 28, 2007 requesting Federal Aviation Administration participation in the environmental processes associated with two unrelated U. S. Air Force (USAF) proposals. We understand that the USAF is proposing to extend and modify the White Elk Military Operations Area (MOA) in Nevada; and, is also proposing to modify the Powder River Training Complex (PRTC), which includes airspace in the Montana, Wyoming, North Dakota, and South Dakota areas.

We are pleased to participate as a cooperating agency, in accordance with the National Environmental Policy Act of 1969, as Amended, and its' implementing regulations. Since the proposals contemplate activities associated with Special Use Airspace (SUA), the FAA will cooperate following the guidelines described in the Memorandum of Understanding between the FAA and the Department of Defense Concerning SUA Environmental Actions, dated October 4, 2005.

The FAA Western Service Area will be the primary focal point for matters related to the White Elk MOA, while the Central Service Area will be the primary focal point for matters related to the PRTC environmental processes. I have forwarded a copy of this letter and your letter to the Western System Support Group Manager, Mr. Clark Desing who can be contacted directly at (425) 917-6700; and to the Central System Support Group Manager, Mr. Don Smith who can be contacted directly at (817) 222-5530. The FAA looks forward to working with the USAF on the environmental process associated with the two proposals identified above.

Sincerely,


Edith V. Parish,
Acting Director

cc: Central and Western Service Areas, System Support